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## TO CALLERS AND TELEPHONERS

Until further notice our office hours are: Mondays to  
Fridays, 9.30 a.m. till 5.30 p.m.

The office is closed on Saturdays

## ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret  
that it is no longer possible for us to answer enquiries  
involving research, or to supply dates when articles appeared  
in back numbers, either by telephone or by letter

## ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrange-  
ments due to the war, and less time available for proof  
reading, we ask our readers' indulgence for typographical and  
other errors they may observe from time to time, also for  
poorer paper and printing compared with pre-war standards

## British Industry Stiffening Against Nationalisation

IN recent weeks the attitude of British industries scheduled  
to come under the nationalisation programme of the  
Government, has changed. When the Government policy was  
first made known, there was a greater measure of acquiescence  
than now prevails. The Bank of England project went forward  
with practically no dissent, and the colliery owners also de-  
cided to co-operate with the Government in putting the  
scheme into effect. The transport industry was the first to  
declare its opposition to nationalisation. The rejection of  
the Government policy by the road hauliers was carried a  
stage further by the Chairmen of the main-line railway com-  
panies at the annual meetings. Since then the electricity sup-  
ply companies have announced their determination to resist  
by every legitimate means the Government's declared inten-  
tion to nationalise their industry. In an official announce-  
ment they state that to bring the electricity supply into State  
ownership is opposed entirely to the interests of taxpayers,  
electricity consumers, and employees of the industry. Cham-  
bers of Commerce and similar organisations of industrialists,  
too, have become more vocal in their protests against the  
Government's nationalisation plans. There is an increasing  
realisation that the Government's schemes are based entirely  
on considerations of political expediency, and grave fears  
consequently are entertained for the future of British trade and  
commerce if the present plans are forced through.

## Lord Glenavy on Northern Ireland Transport Problems

At the annual meeting of the Great Northern Railway  
Company (Ireland) the Chairman, Lord Glenavy, supported  
the proposal of the Government White Paper to unify  
operation of the constituent elements in the Northern Ireland  
public transport services from the viewpoint both of the  
public and the transport undertakings affected. He explained  
that the statutory position of his own company differed  
from that of the other elements, and would need special con-  
sideration, and that the predominant concern in the negotia-  
tions should be with the devising of a transport organisation  
which would give the public a system as sound, economically,  
as the prescribed conditions allowed, with fair financial treat-  
ment for each of the parties called to contribute to it. Lord  
Glenavy also outlined the steps which have been taken by his  
railway to improve services for tourists, and instanced the  
putting into service of two modern trains comprising the  
"Bundoran Express," with the aim of developing traffic to  
and from South County Donegal via Ballyshannon. It has  
also been decided to abolish second class travel.

## Higher Salaries for Members of Parliament

The Select Committee, which has been investigating the ex-  
penses of Members of Parliament, has now published its  
report, which has been issued as a White Paper.\* It recom-  
mends that Members' salaries should be increased from £600 to  
£1,000 a year, of which £500 should be allowed as an expense  
allowance free of income tax. Other recommendations are  
that season tickets should be issued to members living in or  
near London for daily journeys for which they are entitled  
to free travel, and that a committee should be set up to  
assist the Speaker in matters affecting concessions for free travel  
to Members. The committee does not consider that any  
general extension of free rail and air travel or for the grant  
of a car allowance is necessary. Free first class travel  
between London and a Member's constituency was sanctioned  
in 1924. In 1939 Members in the Forces were granted free  
travel between their war stations in the United Kingdom and  
London, and in 1942 between such stations and a Member's  
constituency. Last November free travel was extended to cover  
journeys between a Member's residence and London, and be-  
tween his residence and the constituency, and free travel by  
air was authorised for those journeys and for the journey  
between London and the constituency. All these progressive  
travel concessions are still in force, and it may be that the  
prospect of nationalisation commends itself to a number of  
M.P.s. as holding out promise of unlimited free rail travel.

\* Cmd. 93. H.M. Stationery Office. 4d.

### Canadian Pacific Railway Company

There was a decrease in railway earnings of the Canadian Pacific Railway Company for the year ended December 31, 1945, the figure of \$36,054,334 comparing with \$43,159,665 in 1944. Gross earnings were \$316,109,358, a decrease of \$2,761,676, and working expenses (including taxes) rose by \$4,343,654 to \$280,055,024. Other income of the company, however, namely, receipts from shipping, hotels, communications services, and investments, showed an increase of \$2,735,642 to \$15,106,957, and the final net income of \$31,614,162 compares with \$34,699,830 in 1944. The decrease in railway net earnings is accounted for by a falling off in traffic after the war and higher expenses. On the shipping side, the company placed a new cargo vessel in service during the year, the 10,000-ton ss. *Beaverdell*, and this is the first of a fleet of four similar fast, modern vessels which may be expected to have a further beneficial effect on the company's shipping results during the current year. A dividend of 4 per cent. on the preference stock absorbed \$5,031,500, and the 2 per cent. interim ordinary dividend paid on October 1 took \$6,700,000, leaving a balance transferred to profit and loss account of \$19,882,662. The final ordinary dividend of 3 per cent. required \$10,050,000, and the carry-forward of \$252,722,828 is higher by \$11,057,820.

### Locomotive and Wagon Shortages in Europe

The third report on the transport situation in Europe, compiled by the European Central Inland Transport Organisation (E.C.I.T.O.), deals extensively with the locomotive situation, and points out that locomotive repairs now constitute a problem second only to the general shortage of wagons. In Italy, for example, although the total locomotive stock was higher in 1945 than in 1939, the number of locomotives in use was only 67 per cent. of the 1939 figure. Holland is particularly hard hit by the total absence of machine tools, resulting in a continuous reduction of the number of locomotives in use. It is estimated that in Poland 55 per cent. of the locomotive stock is awaiting repair, in the U.S. occupation zone of Germany 65 per cent., and in the French occupation zone, 55 per cent. The Executive Board of E.C.I.T.O. is now holding regular press conferences in London to report progress, the first of which, presided over by the Chairman of the board, M. Paul de Groote, took place on March 12. M. de Groote said the policy of the board was to expedite in every way the earliest possible restoration of wagons to their owning countries. It was hoped in the near future to mobilise and restore to their owners 100,000 wagons at present out of action.

### Postal Service Improvements

Acknowledgment of the co-operation of the railway companies in measures to speed up letter and parcel mails was made by the Postmaster-General (the Earl of Listowel) in announcing forthcoming postal improvements in the House of Lords on March 12. It was intended, he said, to restore seven more T.P.O.s this year, which would enable the Post Office to guarantee delivery by first post next week-day anywhere in England and Wales of letters posted in time for the 4 p.m. and 5.30 p.m. collections in London. At the same time a beginning would be made with scheduling parcel mails to individual passenger trains, a practice which had to be abandoned during the war. By October, further progress would be made in accelerating parcel mail circulation, and the interval between posting and delivery should be reduced by as much as 24 hr. on medium, and 48 hr. on long distances. The restoration of T.P.O.s forecast for May will make a total of nine in operation, the Euston-Aberdeen and Paddington-Penzance services having been resumed on October 1 last, as recorded in our October 5, 1945, issue. The Postmaster-General also announced that priority would be given to developing night air mail flights between England, Northern Ireland, and Eire.

### L.N.E.R. Recruitment of Trainee Signalmen

The Manchester District of the L.N.E.R. recently has adopted the unusual procedure of advertising outside the railway service for trainee signalmen. The advertisement stated: "The London & North Eastern Railway Company requires men between 20 and 30 years of age of good physique and eyesight

for training as signalmen. The rate of pay during training, which will be both theoretical and practical, will be 85s. per week, increasing later according to the signalbox to which allocated. Applications should be made direct to the Station-master at Victoria Station, Sheffield." The results of this step were so gratifying that after the first insertions of the advertisements which appeared in the *Sheffield Telegraph* and the *Sheffield Star*, it was decided to withdraw the repeat advertisement, as 81 replies had been received. As a first step, 16 of the applicants were selected and joined the signalling school at Sheffield Victoria Station. This school has been functioning since the beginning of the year with an average of 15 pupils, and the influx of the newcomers necessitates an additional class being formed. The classes give a thorough grounding in rules and regulations and block telegraph working, and when this has been mastered by the men, they are allowed to work in boxes as trainees with experienced signalmen. The classes are a training centre for the whole of the Manchester District Superintendent's area.

### High Viaduct Construction in Wartime

Among the more interesting features of the recently-constructed viaduct spanning the 320-ft.-deep Pecos Gorge on the Southern Pacific main line from New Orleans to Los Angeles, are the 275-ft. reinforced concrete piers, built to a cellular design by the continuous slip-shuttering method. The latter enables the shuttering to be raised steadily by hand-jacking to keep pace with the rate of pouring and setting of the concrete, a method postulating vertical construction between offsets. Due consideration has been given to earthquake disturbance and high wind pressure, but these tall piers are relieved of longitudinal thrust exerted through the superstructure by the continuous cantilever truss groups being free to move to and fro over them on roller bearings. The truss groups are securely anchored to two short but stout piers 910 ft. apart on the tops of the cliffs forming the sides of the gorge, limestone rock foundations being available for these as for the other piers. The continuous cantilever design of superstructure also lent itself to the cantilever method of truss erection. The work was carried out as a high-priority war job, and the design enabled the tonnage of steel work to be kept down to 2,700, though it involved 15,500 cu. yd. of concrete in the substructure. The viaduct is described on p. 319.

### Northern Ireland Tourist Industry

Important recommendations relating to the tourist industry in Northern Ireland are made in an interim report by the Planning Advisory Board of the Northern Ireland Government. This report concerns the work of the Tourist Industry Committee, set up to consider to what extent the amenities likely to be available after the war to tourists visiting Northern Ireland would be equal to catering for increased demands, and to recommend what steps should be taken to improve these amenities. The Committee is agreed that, although Government assistance should be provided on a generous scale for the development of the tourist industry, such assistance should be devoted more to general purposes than to making loans or grants for building hotels and boarding houses. An exception is made, however, in the case of undeveloped beauty spots, such as the Lough Erne and Sperrin Mountains areas, where the prospect of immediate financial success would be insufficient to attract private capital. A Government grant is recommended in these circumstances and it is suggested that one of the railway companies or the Transport Board carry out the project. The report states that, while the Road Transport Board and the railway companies should be able to cope with future increased traffic, the cross-Channel passenger services form a serious bottleneck, and an earnest attempt should be made to improve them by providing more tonnage during the peak period. Some easement of the strain, naturally, would be effected by increased air travel, but the Committee considers that the problem could best be surmounted by chartering vessels to be run on a commercial basis either by existing carriers or by newcomers. Discussing the difficulty of accommodating the seasonal rush of visitors the report recommends propaganda to popularise May and June and September as suitable holiday months.

### A Modern L.N.E.R. Workshop at Sheffield

An example of the energetic way in which the railway companies, although still seriously handicapped by shortage of manpower, are concentrating on the provision of plant to meet urgent maintenance needs, is provided by the L.N.E.R. This company has recently completed a modern engineering workshop, which is described and illustrated elsewhere in this issue, where all materials required by 300 repair men in the Sheffield district will be prefabricated and prepared and then forwarded to the outside staff for assembly and erection. In addition to mobile plant maintenance work, moreover, inside work in connection with the maintenance and renewal of signalling will be dealt with here, as well as much of the general work for the Manchester—Sheffield—Wath electrification, and the installation of colour-light signalling in the Sheffield area. As will be seen from the photographs, sections of the workshop are so laid out that ample space is allowed for handling awkward items of work, while the system of overhead heating installed enables the shops to be kept clear of all piping. Another feature of this new workshop is the arrangement of the stores section, which carries more than 3,000 items, stored systematically, so that movement of items in or out can proceed smoothly with a minimum of delay.

### The Bourne End, L.M.S.R., Accident

Lt.-Colonel Sir Alan Mount, in his report on the Bourne End, L.M.S.R., accident, recommends that consideration should be given to the use and uniformity of meaning of the double yellow indication in relation to both 2-aspect semaphore and multiple-aspect colour-light signalling. In the course of the report it is pointed out that the double yellow indication may denote on the L.M.S.R. that the signal applies to the diverging route at a junction. The reason for applying the double yellow, or third, distant indication in semaphore areas, rather than adhering to separate signals which repeated, both as to position and aspect (green and yellow) the previously existing splitting distant, was that the company felt that a colour light displaying green in the diverging signal was undesirable in such circumstances. The double yellow indication was adopted as being more restrictive and so distinctive as to ensure a reduction of speed preparatory to diversion. Sir Alan Mount states that in his opinion it would be preferable, as a matter of principle, if the double yellow indication could mean invariably one thing everywhere, namely, that while it is displayed the next signal ahead shows yellow, and the one beyond that red; that was the original function and intention of double yellow in multiple-aspect areas. Sir Alan Mount also recommends that the railways should be asked to review the question of automatic train control with the object of initiating the introduction of warning control on main lines, provided the equipment is designed to conform with multiple-aspect signalling; also that the audible signal for "clear" should not be given if speed has to be reduced.

### An Outstanding Beyer-Garratt Locomotive Design

In many ways the latest Beyer-Garratt locomotives for the South African Railways are of outstanding interest. They form the largest order in history for articulated locomotives, and, with the 4-8-2 + 2-8-4 wheel arrangement, and a tractive effort of 63,000 lb., are among the most powerful ever put into service on 60-lb. rails. When this order is completed, the South African Railways will have over 250 Garratt locomotives in service. An axle loading of practically 15 tons is now permitted, but the weight distribution is carefully arranged to give decreased loadings on the outer axles of each group. These new locomotives, which we describe elsewhere in this issue, have many constructional details of considerable interest. The total weight in working order is 184½ tons, and the boiler barrel has a diameter of no less than 7 ft. —twice the track gauge—to supply steam to the four 18½ in. by 26 in. cylinders. The distance between tubeplates is only about 11 ft. 8 in., which seems short to those accustomed to conventional British proportions, and illustrates the value of the depth and shape of firebox and large barrel diameter. This order is an important contribution to the revival of export trade.

### South African Railways & Harbours

ANOTHER year of intensive activity is recorded in the report of the South African Railways & Harbours for the twelve months ended March 31, 1945. Despite the arrival of new locomotives from overseas—the first addition to the Administration's engine-power for over five years—and the placing in service of more goods vehicles, it was at times necessary to place restrictions on the loading of general merchandise so as to maintain the movement of export coal and other urgent traffic. Such restrictions, however, were only temporary, and the essential transport needs of the country were adequately met. Passenger travel reached a new high level in the number of journeys made, and difficulties were again experienced in coping with the exceptional demand for accommodation on trains. Various forms of travel rationing were examined and found unsuited to South African needs. Eventually the system was adopted of apportioning accommodation on a percentage basis between military, business, civilian, and emergency bookings. Compared with the restrictive measures which had to be adopted in other countries, such as the cancellation of trains at short notice, passenger train services in South Africa were not unduly curtailed, and schedules, as revised from time to time, were fully maintained, even during the most acute periods.

Coal traffic provided the outstanding feature of the year; export demands coupled with a great increase in consumption within the Union contributed to a total of 20,332,175 tons railed from the collieries. This surpassed by 2,015,337 tons the tonnage conveyed in 1943-44. Tonnage exported was 4,121,769, compared with 3,043,918 tons in 1943-44, and the total exported, bunkered, or shipped to other Union ports or South-West Africa was 5,084,522 tons. The previous record was 4,255,530 tons in 1926-27 during the coal strike in Great Britain. Revenue from coal traffic reached a new high level of £5,152,892. Statistics of railway operations in the year under review are shown in the following table:—

	1943-44	1944-45
Route-miles open	13,301	13,305
Train-miles	68,646,270	70,226,101
Passenger journeys	202,348,562	218,823,055
Goods and minerals (tons)	24,122,499	25,874,702
Coal traffic (tons)	13,804,461	15,545,108
Ton-miles (revenue earning)	8,958,520,701	9,664,670,201
Average haul (miles)	233	230
Operating ratio, per cent.	73.87	75.03
Percentage return on capital	£4 5s. 7d.	£3 7s. 4d.
Passenger receipts	12,218,109	13,762,946
Goods and mineral receipts	23,629,268	26,069,478
Coal traffic receipts	4,541,472	5,152,891
Total earnings	44,053,410	48,769,091
Ordinary working expenditure	28,807,747	32,886,891
Depreciation	3,735,131	3,703,220
Surplus over working expenditure	11,510,532	12,178,980
Surplus over interest, etc.	2,534,802	1,032,490
Capital expenditure, open lines	178,031,583	181,221,861

Revenue in 1944-45 from the combined services of railways, harbours, steamships, and airways was £58,449,551, an increase of £5,383,150, and working expenditure thereon advanced from £51,183,008 to £57,751,016. The revenue surplus from all services was £698,535. After appropriating £500,000 to betterment fund and making a contribution of £487,000 to reduce deficiency in pension and superannuation funds, the final result is a deficit of £288,465, compared with a surplus of £196,393 in 1943-44.

The report records the visit in December, 1944, of Major-General G. S. Szlumper, then Director-General of Transportation, Ministry of Supply, and formerly General Manager of the Southern Railway, to advise upon the improvement of traffic working at Johannesburg Station. After studying the problem on the spot and meeting representatives of the bodies affected, Major-General Szlumper submitted a report dated March 12, 1945, advising the provision of extra accommodation at the station and the utilisation for this purpose of the whole of the Wanderers' Grounds. Major-General Szlumper was also appointed Chairman of a committee to make recommendations on the Cape Town foreshore layout. The committee submitted its report on February 24, 1945, and recommended, among other things, the lowering of the track and platforms at the station to permit the greater part of the station to be decked over, and accommodate roads, ornamental gardens, and other amenities.



## London Passenger Transport Board

THE annual report of the London Passenger Transport Board for the calendar year 1945 in size and scope of content approaches more nearly the pre-war form, although the statistical abstracts are still withheld under the authority of the Minister of War Transport. It shows that the guaranteed fixed annual payment receivable by the board under the terms of the Railway Control Agreement was £4,835,705, but this had to be reduced by £179,066 to reflect the saving in interest charges which resulted from the redemption of the London Transport 4½ per cent. "T.F.A." stock 1942-72 on January 1, 1943. The fixed annual payment was thus reduced to £4,656,639, to which was added a net sum of £23,927 for an adjustment of the net revenue of earlier years, making a total of £4,680,566. Profits on the sale of investments amounted to £5,616, and £1,170 has been brought in from the London Transport "C" stock interest fund. The total available for appropriation was, therefore, £4,687,352, or £14,066 more than the net revenue available for appropriation for the previous year. The additional net revenue was accounted for by the profits on the sale of investments and the adjustment relating to earlier years. These items exceeded by £23,946 the corresponding amount brought into the accounts for the previous year, against which there was a reduction of £9,880 in the sum transferred from the "C" stock interest fund. Interest on the prior charge stocks required £3,901,381, and the amount available for the "C" stock was £785,971, which permitted a final payment of 1½ per cent., making 3 per cent. for the year, the same rate as that paid for the previous year, and leaving £15,007 to be carried to the London Transport "C" stock interest fund.

The report states that substantial arrears of repairs and complete renewals have accumulated, and that the aggregate amount which has been contributed to the maintenance trust fund at the end of last year was £31,100,637. For accounting purposes a proportion of the annual maintenance allowance has been appropriated as provision for the renewal and maintenance reserves. For 1945 the provision for renewal amounted to £2,700,000, compared with £2,720,000 for the previous year, and £125,000, compared with £75,000, was transferred to the maintenance reserve, which provides a fund for extraordinary expenditure falling outside normal maintenance expenditure. After making these provisions and meeting expenditure incurred on ordinary repair work, a proportion of the maintenance allowance remained unappropriated. This balance, with similar balances in previous years, amounting in all to £17,282,230, is included in the balance sheet under the heading "other liabilities—miscellaneous accounts," and it is intended to leave the allocation of this sum until the end of control.

Pointing out that salary and wage rates and price levels rose steeply during the war, and have continued to rise, the report recalls that some fares were increased during the war, and the volume of traffic continues at a high level. Because of the suspension of the London Passenger Pooling Scheme, and for other reasons, the real earnings of the board during the period of Government control are not ascertainable, but the rise in working costs is out of proportion to the yield of wartime fares increases. Further, the statutory obligations as they now exist are not at present being discharged. In the light of these factors some upward movement of fares is to be expected. Much will depend on the volume of traffic, but it is emphasised that it is essential that the board should be placed in a position to meet its working costs and other statutory obligations, and to support further improvements and extensions of the passenger transport services.

The report deals at some length with the wartime experiences of London Transport, and the steps which it was necessary to take to safeguard its works, and to deal with special tasks which devolved on it by reason of its geographical position. In reviewing the board's operations during the war, it is suggested that the volume of travel has to be contrasted with the volume of service provided. In the initial stages of the war, there was a heavy decline, compared with pre-war, both in the traffic, whether in terms of passenger journeys originating or passenger miles, and in the volume of service provided,

in terms of car miles. Thereafter, there was a further reduction in the services. The traffic, however, recovered to a marked degree, and although the number of passengers originating did not quite regain its pre-war level, reduced services had to handle an even higher volume of travel, as measured in passenger miles, than was carried by the pre-war services. The annual number of passengers taking tickets on the board's system in 1940-41, although approximately 900,000,000 fewer than in the year immediately before the war, still approached 3,000,000,000. The number of passengers gradually recovered until, in 1945, they were only 3 per cent. below the pre-war level. On the other hand, passengers travelled further, so that the volume of travel was back to the pre-war level by 1942, and by 1945 the passenger miles run totalled 9,805,501,000, or 13 per cent. more than pre-war.

Of the works included in the new works programme 1935-40, and yet to be finished, the most important are the completion of the North-East London scheme, involving the electrification of the London & North Eastern Railway Sheffield line, and the linking of the board's Central Line to the Ongar line and Grange Hill loop line; the projection of Central Line trains in West London over the Great Western Railway Company's lines towards Ruislip; completion of the North London scheme for projecting the board's Northern and Northern-City Line services over the London & North Eastern Railway Company's Alexandra Palace, High Barnet, and Edgware branches, and the construction of a further extension from Edgware to Bushey Heath; and improvements in north-west London to the Metropolitan & Great Central Joint Line beyond Harrow to Amersham and Chesham.

The programme as a whole was well on the way to completion when interrupted by the war. The lapse of six years has brought into play new factors, especially in connection with town and country planning, the reactions of which upon the programme of works must be given due consideration. The Minister of War Transport has recently decided that priority be given to the completion of the north-eastern and western extensions of the Central Line, and the electrification of the London & North Eastern Railway Company's Sheffield line. Work on these portions of the scheme is being resumed, and will be carried to a conclusion as rapidly as the supply of labour will permit. Reference is made in the report to the possibility, to which the County of London Plan alluded, of constructing new high-speed tube railways to relieve congestion on existing lines. For this purpose use could be made of the lengths of tunnel constructed during the war for use as deep level air raid shelters, in particular on the alignment of the congested Northern Line. The report points out, however, that any tube construction is necessarily costly.

## French Power Signalling Developments

IT is nearly sixty years since the then Northern Railway of France instituted experiments in the operation of points by electric motors, on the recommendation of M. Sartiaux, the Chief Engineer attached to the Traffic Department. The apparatus was of simple and robust design and included electric return indication locking on the controlling lever. It is said to have worked well, and it is not clear why the trials were not then followed up. In due course other railways began to interest themselves in power signalling, using hydraulic, hydro-pneumatic, all-pneumatic, electro-pneumatic, and electric systems. With the coming of track circuit and other refinements, the hydraulic and hydro-pneumatic systems did not lend themselves very easily to the addition of such controls, and eventually, the all-electric system found most favour, and it is today, as far as we can judge, likely to become general in France save perhaps in a few cases where exceptional circumstances might render electro-pneumatic operation preferable.

The first all-electric installation in France is said to be that put into service in 1898 on the former P.L.M. line near its Paris terminus, and still in use. This was constructed on the individual lever principle, but very soon there appeared the idea of the *levier d'itinéraire*, or route-lever, which subsequently had a great vogue in France and has now superseded the individual lever there except in a few special cases. It would appear that route-lever working was first



proposed by an Englishman, C. E. Carr, in 1889, who took out some patents for hydraulic signalling embodying the idea, but as he was at that time unable to incorporate in his designs some things, such as constant detection, since seen to be essential, his proposals could be of little more than scientific interest. In 1898, however, another well-known Northern Railway officer, M. Cossmann, a successor to M. Sartiaux, had made proposals for what was in effect route-lever—or route-setting—working, which were incorporated in a hydraulic signalling scheme and eventually applied in practice some two or three years later. Others occupied themselves with similar ideas, and in 1903 the Bleyne-Ducouso electric route-lever equipment appeared at Bordeaux. Among other designs, mention may be made of the development by M. Descubes, the Engineer of the Eastern Railway, of what is now known as the entrance and exit principle. This idea was applied by him as long ago as 1909. It had been partly formulated by Cossmann. Considerable experience was obtained with various systems, and this has been carefully weighed in making the decisions recently taken regarding future practice.

The creation of the unified railway system in 1938 had made it imperative to formulate more or less standard designs and principles, and this work had already been entered on actively by 1939. It was, as explained by M. Walter, when dealing with the restoration of the signalling in our issue of November 30, 1945, quietly pursued all through the occupation, during which even new designs of equipment were produced and tried. M. Walter has also, in the *Revue Générale des Chemins de fer*, for May-June, 1945, given an informative explanation of the attitude adopted in considering the consequences likely to result from the choice of the route-lever for future work. The majority of signal boxes equipped on that system hitherto have made use of the so-called "mechanical combiner," which means that the levers, or handles, are grouped in a frame, the point motor controls being actuated by slide bars, themselves driven or held fast in groups by the route levers as may be required for any given movement. The interlocking between the route levers is therefore mechanical. The slide bars in effect are the point levers, and the electric locking and other controls are not materially different from what is met with in plain individual lever operation. These frames, which surely represent one of the most attractive ideas ever seen in signalling, have, given such satisfactory service that they are to continue to be installed where they are suitable, and several are on order.

It is felt, however, that the extension of the area worked from one signal box, a feature of present developments everywhere, sometimes renders this construction cumbersome, and that the panel form, with free levers or handles, may offer advantages in such cases. At the same time the remarkable simplicity of the "combiner" remains so attractive that efforts have been made to retain it and incorporate it into a scheme partaking generally of the panel form of working, while involving the dispersal of the equipment over the area in groups, each being controlled from the same point or signal box. This has been achieved by making one or more "combiners," called "*télécombinateurs*," of compact form and locating them at key points throughout the area; the slide bars are then no longer driven by route-levers, but by servo-motors of some kind—say, solenoids—energised by simple buttons or key switches, not themselves at any time locked in the box. If a wrong button is pressed, the servo-motor can produce no effect, being of course locked locally by some conflicting combination. These "combiners" can themselves be worked on the ground as local signal boxes, in an emergency, as in the power-operated lever system of the London Underground, each set of apparatus being fully self-contained. The circuits to the out-location can be coded, if desired.

The particular advantages of this idea, as he sees them, have been developed in another article in the *Revue* for July-August last, by M. Lehuédé, well-known in the French signalling industry, while M. Walter discusses in his article some further modifications to reduce the controlling portion of the apparatus and yet retain some ideas well-accepted in French practice. As soon as conditions become reasonably normal in France, considerable developments in signalling and interlocking, in some cases covering large sec-

tions of route with fully signalled wrong-road working, are to be expected, and the new signal boxes certainly will not be lacking in the originality so long characteristic of the work of our signalling colleagues over the Channel.

### Railway History in Ceylon

**A**FTER considerable agitation in Ceylon for a railway, dating from 1842, a company was formed in 1845 to build a line from Colombo to Kandy. For those early days, the negotiation of a rise of 1,500 ft. concentrated in the last 11 miles of the 75-mile distance between the two termini caused much concern, and it was not until August 3, 1858, that Sir Henry Ward, Governor of the Colony, turned the first sod to inaugurate construction. Difficulties, however, continued to be faced, and the estimates for the cost of constructing the incline were exceeded by over £1,200,000, causing an outcry for work to be reduced to a minimum, and for the contract to be cancelled. The upshot of this demand was the purchase of the railway by the Government, and the end of an extravagant and costly scheme involving reversing stations and stationary engines for working the fear-some inclines proposed.

A new tender was accepted by the Secretary of State in 1863 for £873,000, and construction proceeded on more rational lines, with the result that in 1865 the railway was opened as far as Ambepussa, 34½ miles. On April 25, 1867, the last rail was laid into Kandy, and a passenger service of two trains each way daily was initiated on August 1 of that year. It is of interest to note that the time taken for the 74½-mile journey was 4½ hr., only 5 min. longer than the present schedule. This 5 ft. 6 in. gauge section of line involved 10 tunnels, the longest 365 yd. long, and was laid with 72-lb. rails; it has a ruling gradient of 1 in 45, the sharpest curve being 10-ch. rad. The success of this pioneer railway caused demands for many others, but the mountains throughout much of the island suggested narrow as opposed to broad-gauge extensions. The original selection of a 5 ft. 6 in. gauge had in view eventual linking up with the then Indian railway system via Adam's Bridge, the present South Indian metre-gauge line to Dhanushkodi not having even been projected at that time.

However, the main line was continued as 5 ft. 6 in. gauge from Peradeniya, near Kandy, first to Nawalapitiya in 1874, and thence in successive steps up the mountain section until Nanuoya (5,292 ft. above sea level) was reached in May, 1885. This difficult section involved six more tunnels, 1 in 44 grades, and some curves as sharp as 5-ch. rad. Subsequently, construction was pushed on over the 6,226-ft. summit at Pattipola and descended to Haputale (4,700 ft.) in 1893, and to Bandarawela (4,013 ft.) in the following year. This line was not, however, completed to its present terminus at Badulla (2,236 ft.) until 1924. The coast line from Colombo southwards was the second to be built, the first 27 miles to Kalutara South being completed in 1879. Subsequently, extensions via Galle brought it into Matara, its present terminus, in 1895. The first section of the northern line was opened to Kurunegala in 1894, but it was not until 1914 that the whole of it was completed to Talaimannar, whence the ferry steamer service to Dhanushkodi connects Ceylon with India. The other northern line to Jaffna was completed in 1905, and the north-eastern line to Trincomalee in 1927, the latter taking off from the main eastern line, which reached Batticaloa in 1928. The line along the west coast from Colombo was terminated at Puttalam in 1925.

The longest narrow-gauge line, the Kelani Valley railway, was completed to Opanake in 1919, though the better-known Nuwara Eliya line was built to that hill station in 1903 and extended to Ragalla in the following year. Thus in 1939 there were 834 miles of 5 ft. 6 in. gauge line open to traffic and 117 miles of narrow gauge. Since then, however, the Nanuoya-Nuwara Eliya-Ragalla line was closed to passenger traffic in 1940, and in 1942 and 1943, respectively, a short branch line from Avisawella to Yatiyantota and the Chilaw-Puttalam section were closed and have been dismantled. The route-mileages open in 1945 were, therefore, 5 ft. 6 in. gauge 807 miles, and 2 ft. 6 in. gauge 106 miles.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Pilfering on Railways

Essex House, Essex Street, Strand,  
London, W.C.2. March 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—When, instead of exercising angelic caution, I rashly rushed into print in your issue of January 25, I did not appreciate that in the view of right-minded people, like Mr. E. R. Camp, I ought to be disqualified from criticising the first letter of Mr. F. R. Pratt—in my opinion an illuminating exhibition of police mentality—unless I were able on demand to supply a lightning cure for the evil of pilferage—an evil which has its deep roots in the fact that war, whilst evoking the noblest and the best in some men, undoubtedly fosters the worst in other men.

I appreciate the honour of being designated—as I am by Mr. Camp—as one of the only three persons “who should be able to suggest a solution to this serious problem,” but as I am in default in so doing, although thereunto requested by Mr. Wallis, I have the misfortune—branded, alas, as a quibbler—to remain, apparently

Yours nebulously,

KENNETH BROWN

### The Lines of Communication, Assam

A.D.Tn. Railways, Tn. Directorate,  
HQ, Allied Land Forces, South East Asia.  
February 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It must be very gratifying to all who were engaged on the Assam Lines of Communication to see that a certain amount of publicity is now being given to it. It is, therefore, a pity that some of the matter published in your pages, particularly the article on page 57 of the January 18 issue, is so misleading, and the part played by the Indian Engineers and Royal Engineers is completely ignored.

The Bengal Assam Railway has been described in an American publication as “A Sleepy Tea and Jute Line” and it is the transformation of this line into one carrying world record figures for a metre-gauge line that makes the history of the Assam L. of C. so interesting. Before the war the traffic was five trains each way a day: one mail, one mixed, and three goods of an approximate length of 35 two-axle wagons. The planning of the increased capacity and the execution of the work was an allied (British-American) military matter, and has quite rightly been described as “A Triumph of United Effort.”

In 1942, after the disastrous evacuation from Burma, when some Bengal Assam Railway employees began to desert their posts, Transportation troops of the Indian Engineers were sent up to take over the operation of Manipur Road Station. This, and other stations, continued under military operation throughout the campaign. More operating troops, and construction, maintenance, workshop, stores, bridging, inland water transport, and docks operating units were despatched until, at the time of the peak pressure on the L. of C., all construction was under the control of the Assistant Director of Transportation, Assam (British Military), and the actual operating crews working on the railway were in the following proportion: Bengal Assam Railway, 40 per cent.; Indian Engineers, 40 per cent.; Americans, 20 per cent. The control of railway operating between Katihar and Ledo was at that time vested in the Director of U.S. Military Railway Service, Gauhati.

On August 30, 1944 (*i.e.*, just after the Kohima-Imphal “flap”), a senior American officer gave a lecture in Manipur Road, in the course of which he stated: “Without the assistance of the Indian Engineers Operating Companies we could not have worked this railway. Furthermore, I wish to state that I am certain that had these Operating Companies been given the authority that we now have, they would have been equally successful and it would not have been necessary for us to come at all.” That is a very generous tribute—although not strictly accurate. The American Military Railway Service was needed. We had no equivalent personnel available to provide the necessary supervision.

The statement in your article: “The Lines of Communication Assam was conceived after the famous Quebec Conference in 1943” is incorrect and ignores all the military and Air Force personnel, both British and American, who had been operating in Assam, Burma and supplying China since the closure of the Burma Road in 1942. Undoubtedly the Assam L. of C. was discussed at Quebec, and plans modified, including

the scrapping of the Brahmaputra bridge, which was to take approximately three years to build, by the Bengal Assam Railway on contract.

The statement “But river transport played only a small part” is definitely misleading, as the River Steam Navigation Company could prove by a reference to its statistics of tonnage handled, not to mention the fleet of personnel steamers and the fleet of hospital steamers which did such good work on the Brahmaputra.

Then there was the road transport, including a vehicle ferry over the river Brahmaputra. This was inaugurated and operated by Indian Engineers, I.W.T., with British other ranks to load the vehicles on the ferry. It was later handed over to the Marine Department of the Bengal Assam Railway. Two companies of Indian Engineers were employed on the Beki Bridge, described in your issue of November 30, 1945. The stone was quarried by another company of Indian Engineers.

River ports, railheads, crossing stations, yards, bridges, wagon ferries, etc., were all built by the Indian Engineers, who finished every one of their jobs by the target date set. The Indian Engineers were recruited and trained after 1941, and were officered by some regular R.Es., railway officers from India, Malaya, Burma, U.K., South America and New Zealand.

Mention should also be made of the Indian Tea Association, and the Army supply and medical services, without whose assistance nothing could have been achieved. In the Manipur Road area alone, before D.D.T. was produced, anti-malaria units dug over 600 miles of ditches to drain malaria infested regions.

Yours faithfully,

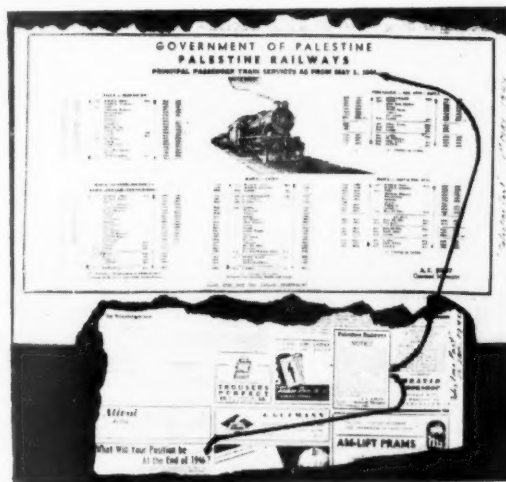
ERIC WOODBRIDGE,  
Lt.-Colonel, I.E.

### Palestine Timetables

P.O. Box 546,  
Haifa, Palestine. February 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was tearing out the largest “pin-up” and the smallest “come and get it” which ever appeared in our local daily paper, wondering if the brightness of a May morning accounted



Timetable announcement in the “Palestine Post”

for the first, and the gloom of mid-winter, when even nature takes a dim view of things, for the other, when that perturbing question which the I.C.S. asks us from time to time caught my eye—“What will your position be at the end of 1946?”

Until then the choice of a title for the new page in my scrap-book didn't call for much imagination, but now I am wavering between the ominous “Writing on the Wall” and the merely facetious “Advertising Manager's Soliloquy.” Do you think any readers—the timetable connoisseurs and the railway economists, say—would advise? It is only fair to direct their attention to Beachcomber's watchful presence, just north-west of the “Trousers Perfect,” of course.

The small type of the Palestine Railways notice is as follows: “Owing to the continued heavy demands for the conveyance of civilian and military goods traffic, it has become necessary to curtail certain passenger train services, and to amend the timings of others, as from January 15, 1946.

Revised passenger train timetables are exhibited at all railway stations. Full particulars may be obtained on application to any stationmaster."

Yours faithfully,

A. L. JONES

[Our correspondent appears to be drawing attention to the fact that the train service advertised in the *Palestine Post* cutting of May 1, 1944, which is reproduced, does not provide much scope for the curtailments announced in the notice of January 1, 1946.—Ed. R.G.]

### Collaboration in Swiss Locomotive Building

S.A. des Ateliers de Sécheron.

Geneva, February 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—In your issue of February 1 you published an article on the new Swiss double-unit electric locomotives series Ae 4/6. At the end we read: "We understand that the engines were built in association with two other well-known Swiss engineering firms and that the Ateliers de Construction Oerlikon supplied the electrical equipment." This statement seems to imply that the associated firms were concerned only with the mechanical parts and that the electrical equipment was supplied solely by Oerlikon. In fact, it is precisely the electrical equipment which was produced by the collaboration of the three Swiss electrical engineering firms, Brown-Boveri

one of the traction motors. Note the interesting welded construction especially of the flange built up of two cold-formed steel plates, a form of construction evolved in our works.

We should be grateful to you for publishing the above information in your journal, which would be only fair to the other firms associated with the construction of the locomotives described in the article mentioned.

Yours faithfully,

S.A. DES ATELIERS DE SÉCHERON

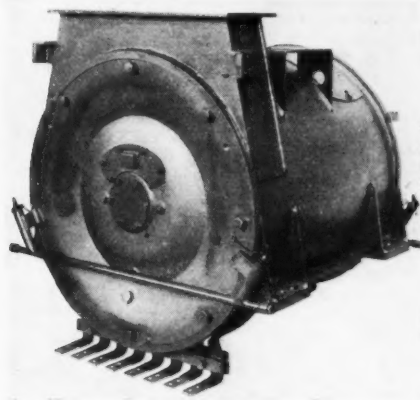
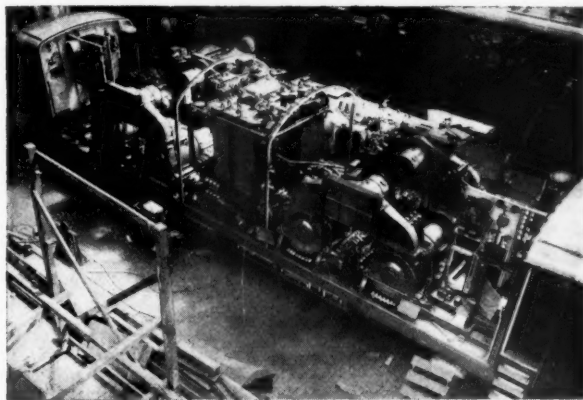
### Diesel Passenger Progress in the United States

London, N.W.3. March 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—Your footnote to my letter printed in your issue of March 15 is an amusing example of the present-day tendency to apologise for any and every railway situation which stirs a breath of comment. War did not affect the American railways as it did our own lines. In the States "alerts" and "war damage" were unknown. Traffic reached new records, but no less than \$948,000,000 were spent on improving permanent way and structures during the 5 years 1940 to 1944. Yet America ran little more than one fifth of the "passenger train miles per route mile" worked in this country.

The fact that American journeys are long is all in favour of high speed, while the admirers of the diesel-electric locomotive claim that it beats the steam engine every time on



Electric locomotive in course of erection at the Sécheron Works, Geneva (left), and traction motor with arc-welded frame and flanges (right)

& Co., Baden; S.A. des Ateliers de Sécheron; and Ateliers de Construction Oerlikon; whereas the mechanical parts were supplied solely by the Swiss Locomotive Works, Winterthur. In this collaboration of the three electrical engineering firms, the railway management is not bound to any rigid plan of distribution of the various parts of equipment between the three firms, but is free to vary from one order to the other the allocation to each of the firms according to the occupation of their works. This applies particularly to erection and assembly, and to the manufacture of motors, which have also been designed by the three firms in collaboration. It will certainly interest your readers to know these facts regarding the exact nature of a collaboration which is certainly to the advantage of railway managements, especially of State railways.

We enclose photographs of the locomotives in question, showing a locomotive in course of erection in our works, and

gradients and in rapid acceleration, besides avoiding stops for water. There are some Americans who do not regard the diesel-electric performance as spectacular and one is not surprised to read that "hotter schedules are necessary if railroads are to meet the challenge of the air and the highway."

Finally, the American railways lost money on their passenger services every year after 1929 to the outbreak of war. The diesel-electric arrived in 1934 and up to 1940 had done nothing to convert the loss into a profit. It is good news that you propose to deal with diesel costs in detail.

The publication of the *Diesel Railway Traction Supplement* has been a happy thought on your part and its usefulness will increase with time and particularly if high-speed diesel-electrics are tried on the British railways.

Yours faithfully,

EXPERIMENTIA

### Publications Received

**Southern Railway Home Guard in Pictures.**—By the Southern Railway, Advertising Department, Waterloo Station, S.E.1, 9½ in. x 6 in., 64 pp., with an introduction and 106 photographs. Price 2s.—This booklet has been published as a tribute to the 35,000 Southern railwaymen who, while carrying on their normal, and frequently abnormal, duties during the war, ensured as members of the Southern Railway Home Guard an efficient force to protect the railway against attack. Although forming part of

the National Home Guard, theirs was a distinct railway organisation, being specially authorised by the War Office on the offer made by Sir Eustace Missenden, General Manager, in response to a request to the railways for special precautions to be taken against parachutists and saboteurs. Though separate from the general service units of the Home Guard, the units of the Southern Railway were affiliated, according to locality, to the appropriate County Regiments. This pictorial record of training, parades, exercises, camps, etc., is an attractive and informative souvenir of an eventful period.

**Summer Holidays.**—A new edition of this booklet, the first since 1939, has been issued, and copies can be obtained, free on request or by post, from any office of Thomas Cook & Son Ltd. In this 1946 edition, England, Scotland, Wales, Northern Ireland, and Eire all figure in the 96 colourful pages which go to make a valuable guide to holiday resorts by the sea or in the countryside, while the published list of hotels and boarding houses, with seasonal tariffs and booking form, provides a particularly useful feature in these days of limited accommodation.



## The Scrap Heap

Mrs. Frances Lehigh, Brooklyn's only woman magistrate, has a sliding scale of fines for smokers on the underground—8s. for cigarettes, 12s. for cigars and £1 for pipes.—From "The Daily Express."

### TINKERS GREEN HALT

Tinkers Green Halt, a tiny one-platform station in Shropshire, was constructed by the G.W.R. in October, 1939, to serve Park Hall Camp. Since it was opened, 2,500,000 Army personnel, including A.T.S., have passed through its gates. The halt got its name from an adjacent meadow which was used by travelling tinkers as a meeting place in far-off times.

The famous American comedian Bob Hope, the *Reader's Digest* records, tells a story about the equally famous crooner Bing Crosby, who owns a racing stable and became disgusted with the way in which his horses were losing. One day he lined them up alongside the main line of the Santa Fé just when the "Super-Chief" streamliner was due. Presently the flyer whizzed past at 100 miles an hour. Whereupon Bing turned to his horses and said, "See what I mean?"

### SOUTHERN WARTIME TRAFFIC AT EXETER

The Southern Railway at Exeter Central Station dealt with nearly two-and-a-half times as much traffic in 1944 as it did in 1938. This was mainly due to the large military depots which were established in

the vicinity of the city, like those at Exton and Dalditch, from which 500,000 Royal Marines were conveyed almost wholly through the Central Station. Between Honiton and Exeter, some 600 special trains were run to convey 350,000 American personnel to and from the city, while the number of wagons dealt with in the Southern Railway marshalling yard at the Central Station was 50,000 more in 1944 than in 1938. The limitation set upon road transport during the war years made Exeter the pivotal point for military traffic in the West of England.

### 100 YEARS AGO

From THE RAILWAY TIMES, March 21, 1846

#### BOURNE'S GREAT WESTERN RAILWAY.

Now ready, in one volume, imperial folio, containing 34 large Plates, three coloured Maps, and other Illustrations, with Letterpress Descriptions, price 4s. 14s. 6d.—The History and Description of the

**GREAT WESTERN RAILWAY;** including its Geology, and the Antiquities of the District through which it passes; accompanied by a plan and section of the railway, a geological map, and by numerous views of the principal viaducts, bridges, tunnels, stations, and of the scenery and antiquities in its vicinity, from drawings taken expressly for this work, and executed in tinted Lithography. By Joux C. Bourne.

\* This important work has been several years in preparation. It contains views of all the principal works and of the chief stations on the line of the Great Western Railway, and of the manner of its approach to the principal towns and cities on its course. In selecting the views, care has been taken to give an accurate representation of the scene, and at the same time to combine with a picturesque drawing an elevation sufficiently correct to be useful to the architect and the engineer. The letterpress portion of the work contains, in addition to the history and description of the railway, notices of the various objects of interest near which it passes, with geological notices of this singular district, and drawings of the more curious churches, and other specimens of ecclesiastical architecture, lying in its vicinity.

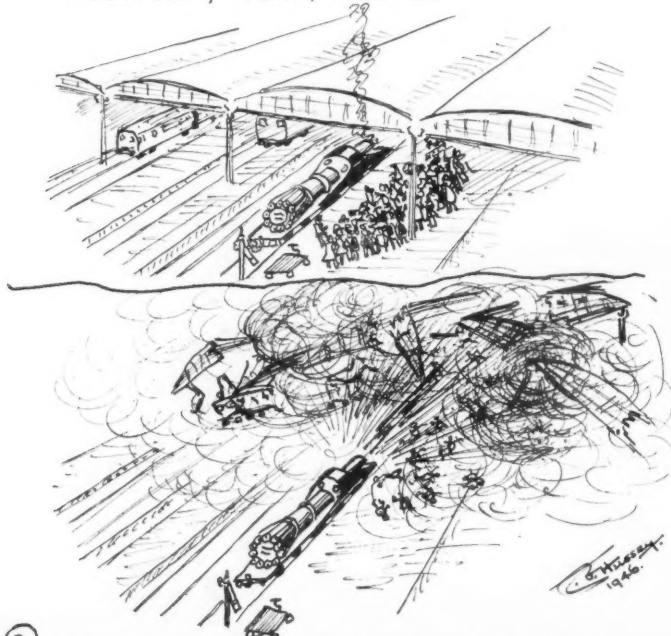
London: D. Bogue, 86, Fleet-street.

## Jet Propulsion on the G.W.R.

EXTRACT FROM G. W. RY CHAIRMAN'S SPEECH, MARCH 1946  
"WE HAVE UNDER CONSIDERATION PLANS FOR... A GAS TURBINE LOCOMOTIVE BASED UPON THE EXPERIENCE GAINED WITH JET PROPULSION"

① "WHAT'S THE CROWD FOR?"

"OH! THAT'S THE NEW JET LOCOMOTIVE, LEAVING PADDINGTON, I HEAR, AT 10.15."



②

"SORRY, I SHOULD HAVE SAID THAT'S PADDINGTON LEAVING THE NEW JET LOCOMOTIVE AT 10.15."

### RAILWAY QUESTIONS AND ANSWERS

**Statement:** Is it not an indication of the present poor financial position of railways generally that much of their stock has lost its trustee status and is unlikely to regain it.

**Answer:** Loss of full trustee status in the case of railway stock was caused by the inability of the companies concerned to make the required payment of not less than 3 per cent. on its ordinary stock for 10 years. There were two reasons for this:—(a) Low return on railway capital in the inter-war years caused by legal restrictions on the railways in the face of severe and unrestricted road competition. The charging structure under the Railways Act of 1921 was framed on the assumption, which has always existed, that the railways would be able to charge less for certain traffics and more for others and from the whole secure a modest and stipulated return sufficient to remunerate the capital and at the same time provide scope for development. The development of road transport, which was free to charge what it liked, and take only those goods which paid it best, upset the railway charging structure designed by Parliament, as the railways lost a large proportion of their higher rated traffic and were left with the bulk of the heavy traffic, which they were compelled to carry at very low rates. As a result of the railways' square deal requests (1938-39), the Government recognised the unfairness of these conditions and was about to introduce legislation to free the railways from these out-of-date restrictions when the war broke out. It was, of course, the railway stockholder who, all through the inter-war years, had to bear the loss which resulted in this one-sided competition between road and rail. Dividends could not be maintained even at the modest figure of 4.7 per cent. fixed by the Railways Act as a fair return on the total capital employed, and as a result the trustee status of certain companies' stocks had to be sacrificed. (b) Public service and the national interest are the first considerations of the railway, if only because under no other policy can they achieve commercial success. In the years between the wars the interests of stockholders were sacrificed (and trustee status lost) because the railways, taking the long view, instead of distributing their small profits in dividends, ploughed back their earnings so as to maintain their systems at the high standard which has made British railways the finest in the world. The results of this policy can be seen in the splendid work the railways have done during the war.—From "Answers to Questions and Statements," issued by the British Main-Line Railway Companies, 22, Palace Chambers, London, S.W.1.

### HARD TIMES FOR LUGGAGE THIEVES

Railway luggage thieves on the Southern Railway may soon find themselves out of business. At least seven thieves are now serving sentences because of quick action by passengers and staff. Timely warnings to railway staff by passengers have resulted in several convictions.

### FRIVOLOUS

Quite a number of people had to waste time at Hastings police court before the Bench dismissed a charge of "travelling without paying the fare." The accusation was absurd, because the fare had been paid. But the ticket-holder had committed the heinous offence of using the return half first. Such proceedings seem frivolous.—From "The Star."

### OPERATING ODES

The Public Relations Officer

In motorcar with leisured air  
The P.R.O. drives daily.  
A speedy transit, special care,  
He'll promise you quite gaily.  
While yard masters round sidings crawl  
At cost of much shoe leather  
To get the wheels to turn at all  
In foul and bitter weather.

At luncheons gay the P.R.O.  
Will talk of coach streamlining  
And photographs of seats he'll show  
With passengers reclining.  
The stationmaster shoves you in  
No matter what your ticket.  
You stand in corridors and grin  
If strong enough to stick it.

H. W. W.

# OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

## INDIA

### Railway Budget

Plans to restore normal conditions on railways and to expand facilities so as to meet further industrial and agricultural production, and give more comfort to inter and third class passengers were outlined in the Budget speeches of Sir Edward Benthall, War Transport Member, and Sir Arthur Griffin, Chief Commissioner of Railways, in the Central Legislature at New Delhi on February 18. Provision is made in the Budget for capital expenditure of Rs. 25.89 crores in 1946-47. This includes Rs. 2 crores for new construction and Rs. 2.37 crores for the purchase of the Sara-Sirajgunj, Ahmedabad-Prantaj, Hoshiarpur-Doab, and Sialkot-Narowal Railways. A sum of Rs. 3.48 crores is set aside for investment in road services.

Passengers carried by railways increased from 513 millions in 1938-39 to 891 millions in 1944-45, excluding military personnel travelling in special trains. In the last calendar year 1,269 military specials were run a month compared with 29 before the war.

### Engineering Progress

The Ajmer Workshops, B.B. & C.I.R., expected to complete the first batch of 10 broad gauge engines ("XT" class 0-4-2 tank engines) before the end of February, and they have already handed over 6. In addition, 2 metre-gauge locomotives were completed last year. Work on the first order for boilers with the new Tata Locomotive & Engineering Company, of Singhbhum, is in hand. Plans and estimates for the new locomotive building workshops at Kanchrapara are being finalised.

Work is in progress on the rebuilding of the Feni Bridge (B.A.R.), the re-girding of the Dufferin Bridge (E.I.R.), and the doubling of the Phalgoo Bridge between Manpur and Gaya (E.I.R.) to remove a bottleneck on the Grand Chord. Important new works include remodelling the inwards goods shed at Karachi, improved goods facilities at New Delhi, and the remodelling of Bareilly City Station. The capacity of the main line from Jhajha to Moghalsarai is to be increased.

### Trains Held Up by Demonstrators

Train services were interrupted and damage was caused to rolling stock at various places by the recent disturbances in India. On February 18, two trains running between Dacca and Narayanganj, on the Bengal Assam Railway, were set on fire by mobs, who proceeded to squat on the track and disorganised the service for three hours.

A passenger train was stopped near Dighuabur Bazar by pulling the communication cord. The mob forced the passengers to alight and then set fire to the coaches. A similar incident occurred at Chasara Station. Armed police were called, and normal running was restored three hours later. The Calcutta Mail, which runs between Dacca and Narayanganj, was delayed for 40 min.

On February 13, strikers and demonstrators held up a train near Kankinara Station on the Bengal Assam Railway. All suburban trains on the Bengal Assam Railway were suspended. Mail trains were diverted to other routes. Similarly,

trains on the East Indian Railway had to be diverted to the Bengal Nagpur line.

On February 15, trains on the Bengal Nagpur Railway were held up for some time at Bauria, where a large crowd squatted on the track. Similar incidents at Akra, on the Bengal Assam Railway, resulted in a suspension of the service to Budge Budge.

## EGYPT

### Diesel-Electric Programme

The Egyptian State Railways are acquiring 15 diesel-electric shunting engines similar to those in use in Great Britain, and 12 main-line diesel-electric 4-8-4 locomotives with 1,600 h.p., 16-cylinder, V-type engines.

[Brief particulars of these engines were given in our November 9, 1945, issue on page 470.—Ed. R.G.]

It is also proposed to acquire twenty five-coach diesel-electric sets, nine of which will work on the Helwan line, and eleven on the main line. The latter would supplement the existing express train service between Cairo and Alexandria. These sets are to have two 4-cylinder engines developing 400 h.p. at 750 r.p.m., one at each end of the set. They are to be fitted with automatic doors, air-conditioning, and permanently-closed windows.

The main line sets are to be more luxuriously appointed than those operating on the Helwan line, and will include a buffet compartment. The accommodation will be first and second class only.

### Interlocking at Sidi Bishr

Sidi Bishr Station, which is situated on the Abi Qir line, 880 km. from Alexandria, is now being remodelled and interlocked. When the signaling work is complete, all stations between Alexandria and Abi Qir will be interlocked with the exception of Abi Qir—the terminus. Sidi Bishr Station serves an area which is developing fast.

### Traffic Control in the Delta

A system of direct control is to be installed between Cairo and the principal centres in the Delta, with a central control office at Cairo. Direct communication will be provided with Benha, Tanta, Damanhour, Alexandria, Gabbary Zagazig, Mansoura, Ismailia, Port Said, and Suez.

### Important Wartime Works

The following important new works were executed during the war:—

1.—The enlargement of the Port of Suez and rail facilities thereat.

2.—Laying of a new line from Suez (east of the canal) to Kantara East, with a physical connection with the E.S.R. Ismailia—Port Said line by bridge over the Suez Canal at Ferdan. The physical connection referred to made unnecessary the use of wagon transporters at Kantara West.

3.—Doubling of the line between Ismailia and Suez.

4.—Laying of an avoiding line from Kafr-el-Dawar to Abdel Qader on the Western Desert line, so that trains to and from the desert could be worked through direct, without passing through the yards at Gabbary.

5.—The laying of a new line from Similla Junction (near Mersa Matruh) to

Capuzzo, and Tobruk. This work was carried out by the military, and the line was shown in relation to the Egyptian State Railways system in a map published in *The Railway Gazette* of November 27, 1942.

6.—The laying of a metre-gauge line between Kena and Safaga.

## KENYA & UGANDA

### Stone-throwing at Trains

A dangerous practice has developed in recent years amongst African children living in scattered huts and villages near the line of throwing stones at passing passenger trains, especially at night. There were no fewer than 78 cases of this type of offence reported in 1945, and passengers have been injured, in some cases quite seriously. In spite of vigorous police action, it is almost impossible to catch the offenders, but efforts are being made through native chiefs and schools to put a stop to the practice by pointing out the grave consequences which may result from this (to the Africans) apparently fascinating game.

## SOUTH AFRICA

### Railway Plans for Natal

The Railway Board is to make a tour of Natal and Zululand, to consider representations that have been made for various rail extensions and improvements. The Minister of Transport, Mr. F. C. Sturrock, made this announcement when receiving a deputation which urged that the Natal North Coast line, which ends at Gollie, should be extended to link up with the line to the Rand at Piet Retief. Other proposals which will be investigated include linking the Greytown-Mount Alida line with Mooi River; the position of the mid-Illovo narrow-gauge branch, which, it is claimed, cannot cope with the growing traffic; and the Maritzburg-Underberg line, which is also stated to be inadequate for the traffic.

### Traffic Prospects

Besides the Minister, the General Manager of Railways and members of the Railway Board were present when the deputation was received. In a memorandum supporting the case for a rail link extension in Zululand, the Joint Farmers' Associations pointed out that in the areas that would be served there are vast tracts of country suitable for afforestation. Much tourist traffic from the Transvaal to False Bay, St. Lucia Lake, and the Game Reserve might also be promoted by the provision of a shorter rail route.

The line, it was submitted, would open up Northern Zululand and Southern Swaziland, would ease coal traffic to the coast, would be of great national and strategic value, and would provide an alternative route from the Rand to Durban. The Minister was told that the development of very large areas of Crown Land in the Pongola and Ubombo areas, which have considerable irrigation possibilities, are at present under discussion. Transportation will be one of the controlling factors in planning this development.

### Tourist Development

The Tourist Development Committee recently appointed by the Minister of Transport to advise the Government on the establishment of machinery for future tourist development, held its first meeting in Cape Town recently. The primary tasks of the committee are:—

(a) To revive the Tourist Development Corporation Act so as to permit of

machinery being established by means of which tourist traffic to Southern Africa could be developed on a scale commensurate with the potentialities of the industry, and for which sufficiently adequate provision is made under the existing Act (Act 15 of 1938).

(b) To submit proposals to the Government for the establishment of an interim organisation to undertake essential and urgent work in connection with tourist development pending the establishment of permanent machinery under the amended powers of the Tourist Development Corporation.

## UNITED STATES

### Southern Pacific Streamliners

The Southern Pacific is to inaugurate a service of streamline trains, hauled by diesel-electric locomotives, between San Francisco and Portland, Oregon. New rolling stock will be provided for the trains, which are to be known as the "Shasta Daylights." Each train will consist of 14 vehicles, and will include an observation-parlour car and a three-car unit comprising diner, kitchen, and coffee shop. A new type of window, giving a wide-angle view vertically as well as horizontally, will be a feature of all the vehicles.

### More Traffic for Fewer Train-miles

In spite of record traffic movement over the Cotton Belt route between St. Louis, Fort Worth, and Gatesville, which reached its peak in March, 1945, the system actually reduced its train-mileage by the acquisition of new steam and diesel motive power. In March, 1944, the Pine Bluff and Shreveport divisions operated a total of 337,824,423 gross ton-miles. In March, 1945, this had increased to 342,001,577 gross ton-miles, but the number of trains was reduced from 1,432 to 1,246, the daily average falling from 46.2 to 41.9. Steps to improve the motive power position were taken as early as 1941, when 7 heavy 4-8-2 freight locomotives were purchased from the Rock Island system. Later in the year the Cotton Belt obtained permission to build 5 additional 4-8-4s in its own shops, and to purchase 3 diesel-electric shunters. Each shunter released an average of 1½ steam locomotives for main-line service. Since then, 23 shunters of the same type have been received or are on order. The diesels work 24 hr. daily, with an 8-hr. inspection period each month and a 14-hr. inspection twice yearly. Their steam predecessors worked a maximum of 16 hr. a day.

In 1943 the system ordered three 5,400-h.p. diesel-electric main-line freight locomotives, all of which were in service by July, 1944. Two more were put into traffic in July, 1945. The diesels work over the heavily graded section between Pine Bluff, Texarkana, and Shreveport, where they can handle 6,000-ton trains in the northbound direction as compared with 3,300 tons by the 4-8-4s, which are the largest steam locomotives on the system. This means that five diesel-hauled trains will handle as much freight in the section as nine worked by steam locomotives. Northwards from Pine Bluff, the 4-8-4s can handle trains of approximately the same weight as the diesels can bring in from the south, and so the minimum of shunting and division is required at Pine Bluff yard.

Until the advent of the diesels, no 4-8-4s were available for working north of Pine Bluff. After the transference of some of them to that section, a decrease

of 17.5 per cent. in the number of trains run was recorded in March, 1945, compared with a year previously, coinciding with a reduction of only 4 per cent. in ton-miles. Other 4-8-4s were put to work between Pine Bluff and Ilmo, with similar benefit to operations in that territory.

## BERMUDA

### Railway Offered for Sale

The Bermuda Railway Co. Ltd. has made an offer to sell its undertaking to the Bermuda Government for £115,000. This offer was made prior to the expiry on December 31, 1945, of the Motorcar Act of 1943, which for the first time in the history of the island permitted the restricted use of motor vehicles. Subsequently, however, all restrictions on the use of motor vehicles have been lifted. Should the railway company's offer of sale be refused, the line could either be abandoned, or kept in operation by heavy Government subsidies. The Transport Board, however, has advised the Legislature to accept the offer. Meanwhile legislation is being considered for a merger of the railway company and the Bermuda Transportation Company, which at present operates all ferry services, and the granting of a bus and lorry monopoly to the combined undertaking. It is understood that delay in dealing with this proposal, which involves abandonment of the railway and is favoured by the railway company, led to the offer to sell the railway. The Bermuda Railway has 22 route-miles of standard gauge line and also operates 20 miles of lorry routes.

## CHINA

### Restoration of China Railways

Six main-line railways are fully operational, and many sections of other railways in China are open to traffic. Efforts are also being made to complete repair work on the remaining trunk lines, stated Dr. Lin Hung-hsun, Vice-Minister of Communications, recently in Chungking. The six main railways fully operational are the Nanking-Shanghai; Shanghai-Hangchow-Ningpo; Peiping-Mukden; Canton-Kowloon; Chengting-Taiyuan (from Shihkiachwang to Taiyuan); and Suifu-Kunming (Szechwan-Yunnan) lines.

Preparatory work for the repair and reconstruction of all disrupted railways has been completed. Rails and sleepers of certain branch lines are being dismantled and some of the double-track railways are being singled so that the extra rails and sleepers can be used to repair the trunk lines. It is estimated that three months will be required to restore the Tientsin-Pukow, and the Peiping-Hankow Railways, and the repair of other trunk lines should be completed within two months.

The Ministry of Communications has appropriated a sum of \$50,000,000 for the repair of the Tatung-Puchow Railway and, in addition, supplied materials for the repair of the Chenting-Taiyuan Railway. Both these lines are in Shansi Province. Traffic on the Kiangnan Railway, owned by a private company, has been suspended, and materials and supplies from this line are being utilised for the reconstruction of the Tientsin-Pukow Railway. Other railway equipment has been imported from Japan, where there is a large surplus.

Sections now in operation along other important lines include 688 km. of the Tientsin-Pukow Railway; 1,015 km. of the Peiping-Hankow Railway; 1,128 km. of the Lunghai Railway; 208 km. of the Tsinan-Tsingtao Railway; 662 km. of the

Peiping-Suiyuan Railway; 693 km. of the Tatung-Puchow Railway; 149 km. of the Chekiang-Kiangsi Railway; 139 km. of the Canton-Hankow Railway; 191 km. of the Hunan-Kwangsi-Kweichow Railway; 89 km. of the Peiping-Kupeikow Railway; and 287 km. of the China section of the Yunnan-Indo-China Railway.

The British and Chinese Corporation, which has been instrumental in providing large sums of money for railway construction since the early 1890's, is about to reopen its Shanghai office. Mr. A. L. Whitehouse, of the Corporation, who is visiting Chungking, said he had come to see what his organisation could do to help railway rehabilitation and reconstruction in post-war China. The corporation is a subsidiary of the Hongkong & Shanghai Banking Corporation.

## FRANCE

### Restoration of Transport

Reviewing the reconstruction work carried out since the liberation, M. Moch, Minister of Public Works & Transport, stated recently that 1,863 miles out of 2,484 miles of railway lines and 2,200 bridges had been restored to traffic. Signal boxes and other permanent way equipment to a total of 7,000 out of 13,000 had been reinstalled. Rolling stock available now comprised 8,700 locomotives and 270,000 wagons. Nearly all the 6,000 wrecked road bridges had been rebuilt, provisionally or finally. For road traffic only 83,000 out of 425,000 lorries remained available after the liberation, but lorries were now being built at the rate of 3,200 a month.

## SWITZERLAND

### Schaffhouse—Ettwil Electrification

Electric traction was introduced on December 15, 1945, between Schaffhouse and Ettwil (10½ miles) on the standard-gauge line from Schaffhouse to Rorschach. Colour-light signalling was introduced at the same time. The eastern section of the line, from Rorschach to Romanshorn (9½ miles) had already been electrified.

### Federal Railways Results

The financial results of the Swiss Federal Railways for 1945 show an increase of slightly more than 10 per cent. in total working receipts compared with 1944, due almost wholly to an expansion in passenger receipts of about 13½ per cent. This, however, was offset by a contraction in goods receipts of more than 9½ per cent. The official preliminary figures are as follows:—

	1945	1944
	Swiss francs	Swiss francs
Passengers ...	253,864,763	222,580,181
Goods, luggage, livestock, and postal ...	237,868,337	262,956,841
Miscellaneous ...	18,290,356	19,139,985
	510,023,456	504,677,007

Working expenditure for 1945 increased by slightly less than 5 per cent. The greatest increase, of about 8 per cent., occurred in expenditure in respect of train and station services. The increase in expenditure was mainly due to higher wage supplements and higher pensions, to the increased number of the personnel and to higher costs of materials. On the other hand, there was a contraction in the expenditure on wagon hire because of decreased goods traffic, and further economies were recorded in respect of locomotive fuel as a result of further electrification. The total expenditure was fr. 351,612,569, compared with fr. 335,189,633 in 1944.



## New Pecos Gorge Viaduct, Southern Pacific

*Heavy war traffic recently necessitated the replacement of the old Pecos Gorge Viaduct by a new structure with 275-ft. hollow R.C. piers and continuous cantilever deck spans*

IN 1891 a spectacularly spider-like viaduct of great height was constructed to carry single-line traffic over the Pecos Gorge in Texas. It was mainly of wrought iron and had high four-legged trestle towers. By the addition of central columns in 1909-10 these towers were strengthened as six-legged structures, but in 1929 it was found necessary to strengthen the viaduct still further by reinforcing many of its members to bring it up to Cooper's E 60 loading, though this was possible only under severe speed restriction of 12 m.p.h.

### The Selected Design

During the war, however, this viaduct became a bottleneck on the vitally important Southern Pacific route from New Orleans to Los Angeles, over which very heavy traffic had to be moved. It was thus essential to construct a new viaduct capable of carrying E 72 live loads and of resisting earthquake and severe wind forces.

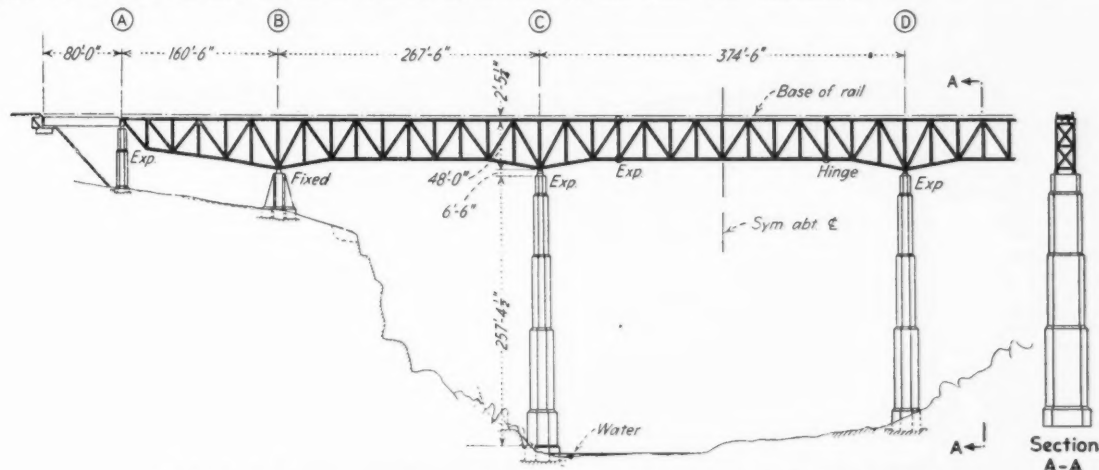
In 1942 twelve different designs were prepared for the new structure and from

entirely free from longitudinal forces exerted through the girders. Maximum calculated pressures on the edges of the footings does not exceed 450 lb. per sq. in. as a result of combined earthquake and wind pressure. Preliminary borings showed that the limestone foundations could be relied on to withstand this pressure as well as the 9.6 tons per sq. ft. resultant from ordinary dead and live loads.

The design embodied continuity of the superstructure between piers B and E to facilitate erection from both sides of the gorge with final closure in the middle of the central suspended span. Cantilever erection of spans BC and DE to reach the high piers was aided by the use of eight 2½-in. dia. tie rods embedded 32 ft. in piers A and F as anchorages. The measured sag at the noses of these spans just before reaching the high piers eventually proved to be 17½ in. Spans BC and DE were designed subsequently to act as counterweights for the erection of the two halves of the central 375-ft. span, which includes the 214-ft. suspended span. For

of earthquake forces and facilitating the curing of the concrete. As the sides and ends are vertical—the batter being in the form of offsets or steps—the slip shuttering method of construction was used. In it the 4 ft. high shuttering was jacked up slowly as the concrete sets by means of 1-in. dia. jacking rods fixed at 5-ft. to 7-ft. intervals, and extending down into the concrete as reinforcement. The jacking was done against the yokes that braced together the tops of the shuttering.

To begin with, some 12 in. of concrete were poured into the shuttering, but the speed of pouring was then slowed down so that by the time the whole mould was full to within 6 in. of its top, the concrete in the bottom of it had set sufficiently to permit of a start being made with the jacking; the period of time was usually from 6 to 8 hr. Once the jacking had begun the pouring and jacking were continuous, the concrete level being kept constant about 6 in. below the top of the shuttering. The jacking was carried out by men walking round the mould and giving each jack a part-turn to raise the shuttering ¼ in. to ½ in. at a time. To ensure that the shuttering was kept level and that it was rising vertically, frequent checks were kept on the level and by plumbing with a theodolite, and the jacking adjusted accordingly.



Principal dimensions and general arrangement of bridge over the Pecos River gorge

these the one selected for construction was for a single-line viaduct to cross the gorge 440 ft. downstream from the old bridge; the gorge at that point is 770 ft. wide between cliffs 322 ft. high. Limestone rock foundations were available for all piers, and to economise steelwork the design included hollow reinforced concrete piers and a continuous cantilever superstructure of medium carbon steel. The weight of steelwork was thus kept down to 2,700 tons, and the design of the superstructure was dictated by the necessity for using the cantilever method of erection across so deep a gap.

As well as E 72 live loading, the design provides for 0.1 g. earthquake and 50 lb. per sq. ft. wind pressure. This earthquake force exerted longitudinally plus traction and braking forces are resisted by specially-designed low piers B and E, one on the top of each bluff, anchorage being obtained by the use of 12 1½-in. bolts embedded 10 ft. in each pier to secure the fixed shoes holding the girders. In no circumstances are the foundations of these piers submitted to tension. The superstructure is carried by the high piers in the gorge—the higher of which is 275 ft. from its rock foundation—on roller bearings, so that these piers are

closure at the centre, provision for jacking was made in the top and bottom chords at the ends of the suspended span, which eventually was to be swung free by the release of the jacks. The top chord members over piers B and E were to be freed finally and the connections reamed with no stress. The trusses over these piers, therefore, were theoretically hinged when the bridge was subjected only to erection dead load, and are continuous under the additional dead load of the decking as under live load impact, and wind forces.

The design provides stability in the two continuous truss groups against overturning by their having two bearing reactions at the same level and two raised reactions at the outer ends, and also by the 19-ft. truss spacing between centres. The deck has a wrought-iron sheet covering and protecting the sleepers against fire and preventing corrosion in the superstructure generally from brine drip. The link-type expansion shoes at the end piers A and F are designed to withstand uplift during erection.

The two high piers C and D are of hollow R.C. construction with diaphragm walls, this design securing lightness under the effect

For curing and to cool the mass concrete, horizontal rings of perforated pipe were fixed to the bottoms of the shuttering, on both inner and outer faces, to provide continuous water sprays. Special reinforcement is arranged at the bottoms of the batter offsets and in the diaphragm walls to resist tension.

### Concrete Fed by Aerial Ropeway

The concrete was fed from a mixing plant by an aerial ropeway across the gorge on the centre line of the bridge. It carried a 2-cu. yd. bottom-dump bucket, which made as many as eight trips an hour, each involving up to 1,600 ft. of horizontal and 550 ft. of vertical travel. The substructure contains 15,500 cu. yd. of concrete.

The new bridge was opened for traffic on December 21, 1944, but for security reasons details of it have only recently been released. The work was carried out under the general supervision of Mr. R. W. Barnes, then Chief Engineer and now Vice-President, S.P.R.R. Messrs. Modjeski and Masters were the consulting engineers, according to our American contemporary, *Engineering News-Record*, to which we are indebted for the above details and illustrations.

## Modern Engineering Workshops and Stores at Sheffield, L.N.E.R.

*Centralisation of manufacture for a wide area*

**D**ESIGNED to replace buildings either out-of-date or damaged by enemy action, modern engineering workshops and stores have been opened recently by the L.N.E.R. at Woodburn Junction, Sheffield, where it is intended to centralise a considerable amount of manufacturing work for use over a wide area.

Fitments and materials will be prepared

mobile plant maintenance for the whole district, shop work in connection with the maintenance and renewal of signalling is dealt with here. Much of the general work for the Manchester-Sheffield-Wath electrification and the installation of colour-light signalling in the Sheffield area will be included in the schedule.

The machine shop is equipped with elec-

so that material arriving in bulk from the central supply or from manufacturers direct comes in by rail or road and is delivered to the reception compound. It then goes into stock in the main stores and as required is assembled and parcelled out in the despatch compound at the opposite end of the building. From there it is loaded away by rail or road or earmarked for direct collection for use in the workshops.

The timber and cement stores measure 95 ft. x 36 ft. Timber of all kinds necessary for the district is supplied direct by rail from the central supplying depots, and



*Inspectors' and timekeepers' offices at Woodburn Junction*

in these workshops also for about 300 travelling repair men engaged in maintaining the Sheffield district, which includes 75 stations, 180 signal boxes, over 900 bridges, six locomotive depots and six major goods depots; there is also much other work in connection with tunnels, culverts, retaining walls, and so forth, to be undertaken.

The workshops are housed in one long building, 490 ft. x 36 ft., and comprise fitters', machine, welding and blacksmiths' shops, fed into the assembly area on one side, with the sawmill, fed from the timber store and leading to the joiners' shop and central assembly area, on the other. In the range of main shops are also plumbers' and plant shops and garage accommodation for district road lorries.

All materials required on the district are prefabricated and prepared in these shops and forwarded to the outside staff for assembly and erection. In addition to

trically-driven lathe, shaping and screwing machines, and large radial drill, which are so laid out that awkward items of work can be handled easily and without fouling adjacent machines. Tool repairs for all the permanent way staff in the area are carried out and for this purpose a Hardy-Pick tool fettling machine and furnace are installed.

Heating throughout is by the Unit-Vectare system, which maintains a constant temperature and is suspended overhead, thereby keeping the shops clear of all piping.

Another feature is the district stores in which over 3,000 items are available, covering all requisites for both engineers' sundries and signalling stores. It is housed in an adjoining building 140 ft. x 40 ft. Steel-sectional binning for storing lighter articles and concrete floor bins for heavier materials give ease of access.

The stores are arranged systematically

stored under cover in modern drying sheds, whence it is run by tramway as required direct to the sawmill. By this tramway it is possible to trolley heavy articles from various shops to the main.

To keep check of the many items passing through the works, together with their relation to the number of jobs occurring in such a large district, the cabinet system of works control was introduced, which enables the supply of material and the orderly arrangements of manufacture in the shops to be linked up with the actual work on the sites. This ensures proper control.

Although this work was started in 1940, because of manpower shortage progress was almost negligible, but the need for the new shops after war damage to the old premises was so great that with the approach of better conditions a concentrated effort was made to complete the new block.

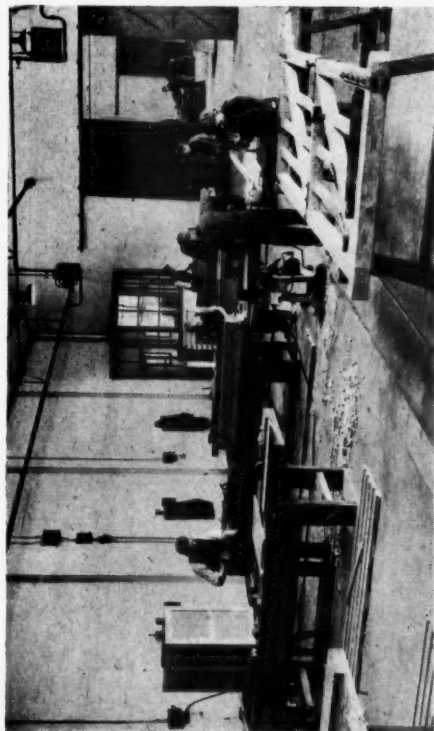
**DEMONSTRATING PRECAST - CONCRETE HOUSE CONSTRUCTION.**—Sponsored by the British Cast Concrete Federation, which comprises 200 manufacturers of cast concrete and cast-stone products, an exhibition was held in London recently to demonstrate various systems of prefabricated house construction. At the opening ceremony, Mr. Marcus Girling, Acting Chairman of the B.C.C.F. Housing Section, stated that the wide variety of products manufactured by members, which included pipes, manholes, lighting standards, fencing, etc., and specially designed units such as huts and railway sleepers, absorbed only about one-third of the manufacturing capacity of the industry, and, therefore, the Federation

had decided that, as concrete is a permanent material, it could well be used for permanent prefabricated houses, and that, with the return of an adequate labour force, the industry could make a worthwhile contribution towards the provision of houses. Mr. Girling said he understood that the Government already was negotiating for the production of 40,000 houses of the Airey type in the next two years, which left the industry with an estimated margin of capacity for 10,000 houses in 1946, and 30,000 in 1947, to be built on systems other than the Airey. In making this estimate they were considerably helped by the knowledge that all the raw materials required for the manufacture of the concrete units are in ready supply and at the same

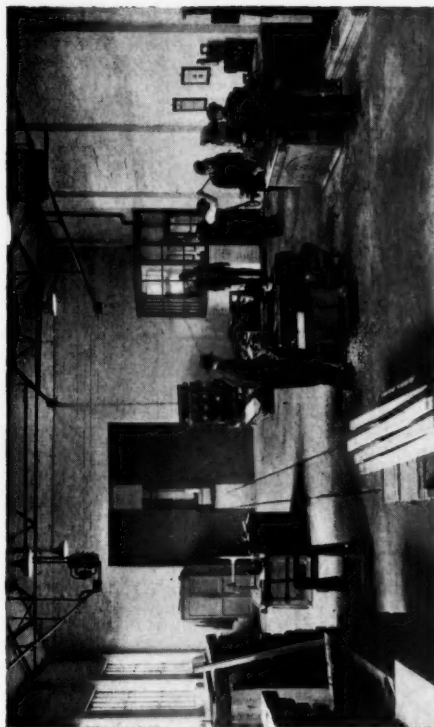
time they had not overlooked the fact that many of their normal products would still be required for other methods of building.

**SALVADOR RAILWAY CO. LTD.**—Receipts for the year ended June 30, 1945, were £120,962, compared with £119,378 in 1943-44, but increased expenditure under the head of wages and materials reduced the profit on working by nearly £6,000, the figure of £21,071 comparing with £27,006 in the previous year. The net revenue account shows a debit balance of £51,875, the same as in 1943-44. The report states that the company has reached an agreement with the Esso Standard Oil Company to convert its locomotives to oil-burning at an annual saving of £10,000.

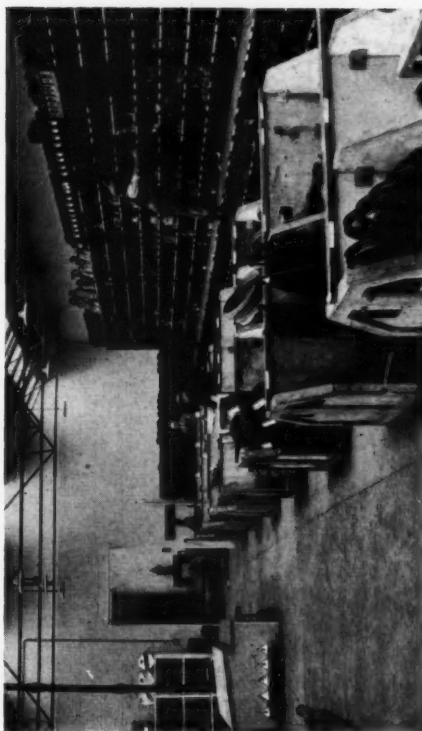
# Modern Workshops and Stores at Sheffield, L.N.E.R.



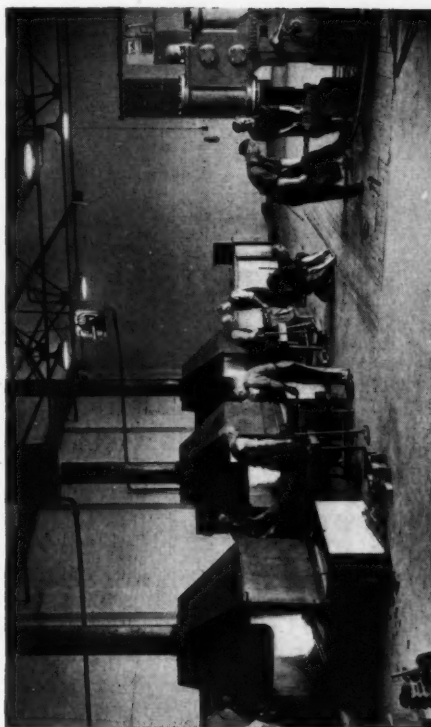
*The joiners' shop, with a portable electric planer in the centre*



*Section of the sawmill, showing the overhead heating system*



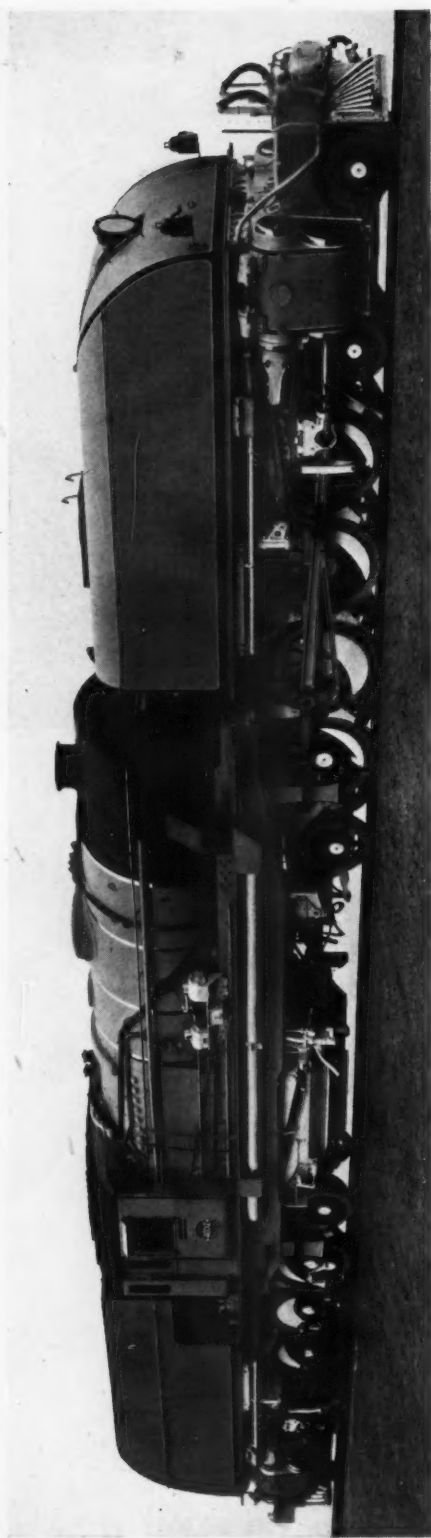
*Sundries and signal stores section at Woodburn Junction*



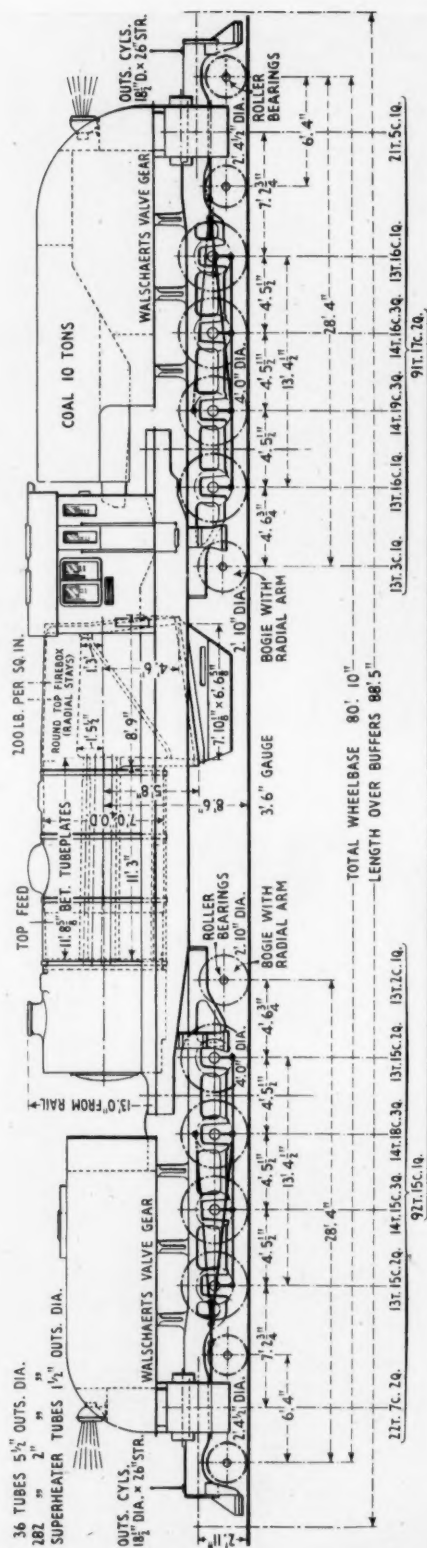
*Blacksmiths' shop, with 3-cwt. pneumatic hammer on the right*



### Beyer-Garratt 3-ft. 6-in. Gauge Locomotives, South African Railways



*General view of 4-8-2 + 2-8-4 Beyer-Garratt locomotive for South African Railways*

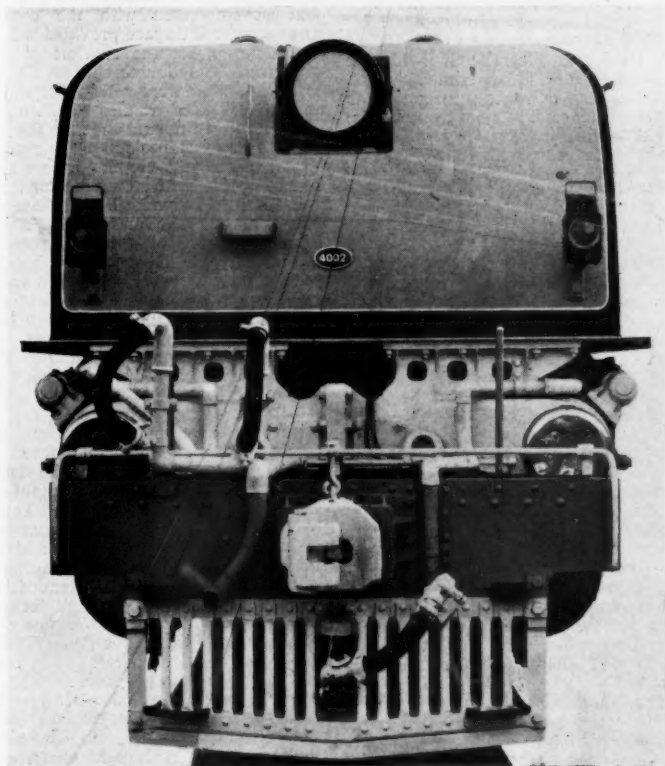


TOTAL WEIGHT IN WORKING ORDER = 1847.12c. 3Q.

*Axle loading, spacing, and principal dimensions, of new Beyer-Garratt locomotive, S.A.R.*

## Fifty Beyer-Garratt Locomotives Ordered for the South African Railways

*New design of outstanding power for general purpose work on 60-lb. rail 3-ft. 6-in. gauge*



*End view, showing automatic coupler, vacuum, water, and steam-heating connections*

THE South African Railways for many years have been users of several types of Beyer-Garratt locomotives and have over 200 built on the Garratt principle in service. The majority of these locomotives has been used on the numerous branch lines throughout this great railway system. Most of these lines are laid with 60-lb. rail, are single, and traverse very difficult terrain. The traffic on many of them has attained main-line propor-

tions and a great deal of money has been spent on re-alignment to eliminate curves and grades, but, nevertheless, long sections of very heavy gradient of the order of 1 in 50, 1 in 40, and even 1 in 30 with very sharp curvature still abound. The highest possible tractive effort, therefore, is required to achieve maximum capacity and operating efficiency.

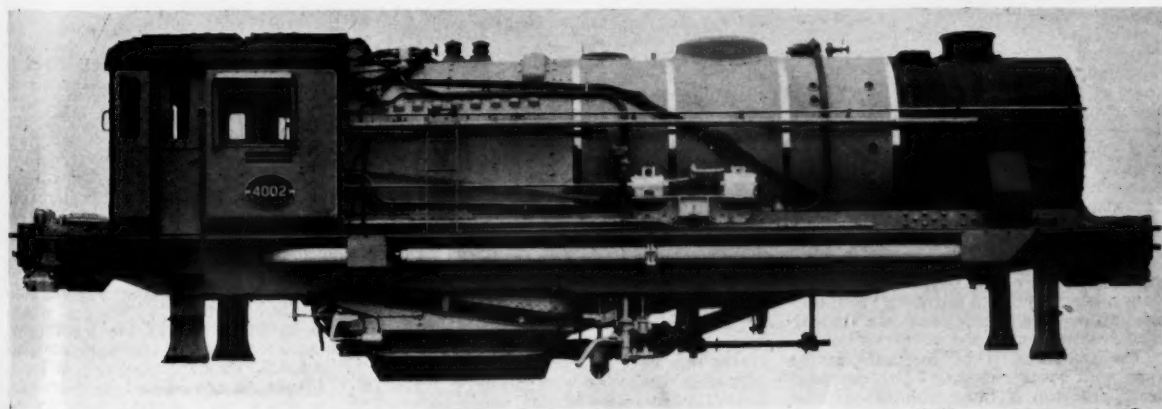
The latest design of engine power for the South African Railways is a general

purpose locomotive to meet these onerous conditions, and by the courtesy of Beyer, Peacock & Co. Ltd., we describe and illustrate these remarkable machines of which no less than 50 were ordered during the war; a number has now been shipped. This order is one of the largest for locomotives ever placed in this country by an overseas railway and in fact is the largest order for articulated engines ever placed in the world. The design (S.A.R. classification class "GEA") is one of the most powerful in the world for 60-lb. rail operation with a tractive effort of over 60,000 lb.

The first eight-coupled Beyer-Garratt locomotives were supplied by Beyer, Peacock & Co. Ltd. to the South African Railways in 1925, and had a 2-8-2 + 2-8-2 wheel arrangement (class "GE"). Further locomotives having the same wheel arrangement with various improvements were supplied through the years, as well as other eight-coupled types. The new design, although developed from the class "GE," bears little resemblance to the old engine except for the boiler, which is interchangeable; it is a completely new design embodying the latest practice of the railway and the makers.

As regards the boiler certain alterations and improvements have been made; for example, the firebox, round top instead of Belpaire, is of steel instead of copper, pressure 200-lb. instead of 180-lb., and increased superheating surface. The wheel arrangement has been extended to 4-8-2 + 2-8-4 to permit increased coal and water supplies and the coupled wheel has been increased from 3 ft. 9½ in. (later altered to 3 ft. 10 in. in South Africa) to 4 ft. The engine unit chassis now have bar frames instead of plate. The axle loading is of unusual interest, as it will be noted that a maximum of nearly 15 tons is reached on the driving wheel, instead of a normal 13 or 13½ tons. The weights, however, decrease towards the extremities of the units. Thus a tractive effort at 85 per cent. boiler pressure of 63,030-lb. is obtained, with a total weight of locomotive in working order of 184½ tons. The engine is designed to negotiate a minimum curve of 275 ft. radius with 4½ in. super-elevation and gauge widening not exceeding ½ in. It will be noted that all coupled wheels have full flanges according to the latest practice of the railway; the rigid wheel base is 13 ft. 4½ in.

In this connection it is interesting to recall the last Beyer-Garratt engines delivered to the South African Railways immediately before the war (class "GM")



*Fully assembled boiler in cradle*

which were described in *The Railway Gazette* of December 9, 1938. This latter engine was designed for operation with an auxiliary water tank and it will be noted that the present locomotives are self-contained as to water capacity, although connections have been provided for coupling to an auxiliary water tank, should this be required at any time.

The locomotives have been designed and built at the works of Beyer, Peacock & Co. Ltd., Manchester, to the specification and special requirements of Dr. M. M. Loubser, the Chief Mechanical Engineer, and the construction and testing of the first engines have been carried out in collaboration with and under the inspection of Mr. W. H. Maass, Acting Advisory Engineer, South Africa House, London. The remainder of the locomotives will come under Dr. L. Douglas, the present Advisory Engineer.

The first locomotives have been shipped to Port Elizabeth for erection at Uitenhage, whence they will be distributed to various congested lines. Their exact destination is not yet known, but we understand the North Coast Line, which runs 250 miles northwards from Durban, is likely to get a number and that some may be put on the Mossel Bay-Oudtshoorn Section, which contains the famous 1 in 36 and 1 in 40 sections, crossing the Outeniqua Mountains; and that a number will operate in the Pretoria district. It is at any rate evident that the sphere of operation of the Beyer-Garratt type of locomotive will be considerably extended throughout the Union by their advent.

The following are the principal dimensions:—

Grate area ...	51.3 sq. ft.
Coal capacity ...	10 tons
Water capacity ...	5,650 gal.
Tractive effort at 85 per cent. B.P.	63,030 lb.
Tractive effort at 75 per cent. B.P.	55,620 lb.
Cylinders (4), dia. x stroke ...	18½ in. x 26 in.
Coupled wheels, dia. ...	4 ft.
Bogie wheel, dia. ...	2 ft. 4½ in.
Truck wheel, dia. ...	2 ft. 10 in.
Wheelbase, rigid ...	13 ft. 4½ in.
Maximum axleload ...	15 tons
Adhesive weight ...	115 tons
Total weight (in working order) ...	184½ tons
Boiler pressure ...	200 lb./sq. in.
Heating surface —	
Tubes—36 flue 5½ in. out. dia.	
282 small 2 in. out. dia.	2,328 sq. ft.
Firebox (incl. arch tubes) ...	212 sq. ft.
Total evaporative ...	2,540 sq. ft.
Superheater—1½ in. dia. tubes ...	463 sq. ft.
Total ...	3,003 sq. ft.

#### Boiler

The two illustrations of the boiler emphasise the large barrel diameter (7 ft. 0¼ in.) and the large smokebox. The boiler barrel and firebox shell plates are of carbon steel, of 26-30 tons per sq. in. tensile strength, and the inner firebox plates are of special firebox quality steel. The firebox has direct roof stays with two rows of flexible stays at the front end; the arch tubes, with copper ferrules, are expanded into the firebox plates and the ends of the tubes are then flared. Liberal washing out facilities are provided and a manhole is located behind the dome in accordance with S.A.R. practice. There are 36 flue tubes 5½ in. outside diameter by ⅞ in. thick and 282 small tubes 2 in. outside diameter by 11 s.w.g. thick. The superheater is of the Superheater Company's latest type with thirty-six 1½ in. outside diameter elements, and the header incorporates a multiple valve regulator.

The smokebox is of the self-cleaning type with spark arrester. The gunmetal blast pipe top is fitted with Goodfellow tips. The ashpan, of the latest self-cleaning hopper type, has a permanent air-space of 5 in. at the sides. There is also

a very efficient arrangement of drench pipes. The ash doors are steam operated with provision for hand operation if required. The rocking grate is made up of finger bars with 1 in. air space and is operated by steam cylinders. There are two pairs of drop grates, one pair at the front and a second pair towards the back, each operated independently by hand levers in the cab.

Two Davies & Metcalfe No. 13 live steam injectors are fitted, with 11½ mm. Monitor cones, delivering through one Duplex topped clackbox in front of the dome. A steam release valve is placed in front of the topped clackbox.

#### Engine Units and Boiler Frame

The main frames are of rolled-steel bar 4 in. thick, of open hearth basic steel with a tensile strength of 32-38 tons per sq. in., braced throughout with robust cast-steel frame stretchers. The cylinders and exhaust box are bolted together on the centre line of the engine. The pivots, of the latest Beyer Peacock patent inverted adjustable type, are cast integral with a massive cast-steel cross stretcher. Oil lubrication is arranged for the pivot centre bearings and grease lubrication for the adjustable blocks.

A very rigid specification has been followed as to the weight distribution and balancing. The revolving weights are completely balanced in each wheel and it is specified that a maximum hammer-blow of 1 ton at 45 m.p.h. shall not be exceeded; the overbalance in respect of the reciprocating parts is thus limited to 21 per cent. and this has been equally distributed throughout the coupled wheels. During construction each pair of coupled wheels is individually checked for overbalance.

The spring-gear arrangement is of the overhung type, and three-point suspension is provided, the inner truck and the coupled wheels (being compensated throughout on each side of the engine) providing two points and the outer four-wheel bogie providing the third point. The spring links are fitted with eccentric spring pins with the hole in the link ⅛ in. larger than the pin. This is intended to give a rolling motion with a view to reducing wear.

#### Cylinders, Valve Gear and Motion

The cylinders are cast integral with the box section exhaust passages and are fitted with renewable liners. The cast-iron pistons are of box type with three narrow rings. The 10 in. diameter piston valves have four narrow rings in each head. Hard grease is introduced through the gudgeon pin to the small end of the connecting rod.

Walschaerts valve gear is fitted and the die block is positioned in the direct half of the link on both engines for forward gear. With a valve travel of 6½ in. a maximum cut-off of 75 per cent. is obtained in full gear. The crank ends of the eccentric rods are fitted with Hoffman ball bearings and the reversing link with Hoffman roller bearings.

The outer bogies, with bar frames, have two-pin swing links and laminated side-control springs. Provision is made for a total side play of 7 in. Tyre-watering gear is arranged for the outer pairs of bogie wheels. The inner truck is of the two-wheel radial-arm type with helical spring side control, and has a total side play of 4 in. Both bogies and inner trucks have Timken roller bearing axleboxes.

The joints of both steam and exhaust pipes are made with cast iron half-lens rings, and the steam ball joints have a cast

iron ball working in a cast steel socket. The exhaust ball joints are of gun-metal, working in a cast-steel socket, the slip joint being of cast iron.

#### Cab and Mountings

The cab arrangement of these locomotives is a special feature and one cannot but be impressed with the convenient arrangement and space provided with every consideration for the comfort of the enginemen. The double roof is lined with teak, and ventilators with roller slides are provided. There are also ventilating doors in the cab front and sides. The sliding louvres in the cab sides provide adequate protection for the crew and there are also hinged adjustable windscreens for the lookout. Both driver and fireman have upholstered hinged seats and padded arm-rests. The firedoor is of the sliding type and in the centre of the backplate is mounted a Clyde soot blower. The lubrication is provided by two 4-feed Wakefield Eureka type H sight-feed lubricators with transfer fillers; each supplies one feed to the steam pipe at the ball joint, one to each cylinder barrel and one feed split between steam chests.

All valve and valve seats for boiler fittings are of aluminium bronze. Stone's electric lighting equipment is fitted with a T.G.H. type generator on the left-hand boiler frame, which has an output of 500 watts. This feeds two 14 in. Tonum E headlight lamps for illuminating the gauges, sight feed lubricators and reversing sector. There is also a lamp mounted outside the cab back for illuminating the coal bunker and a light well forward of the firebox to enable the engine crew to observe the injector overflow. There are two portable oil-burning water-gauge lamps for emergency use. The small hinged door on the tank platform plate at each sandbox, together with a deflector plate, assists filling and protects the motion parts. A Stone's electrical non-recording speed indicator is provided with the usual adjustment for wheel diameter.

#### Brake Gear, Tanks, and Draw Gear

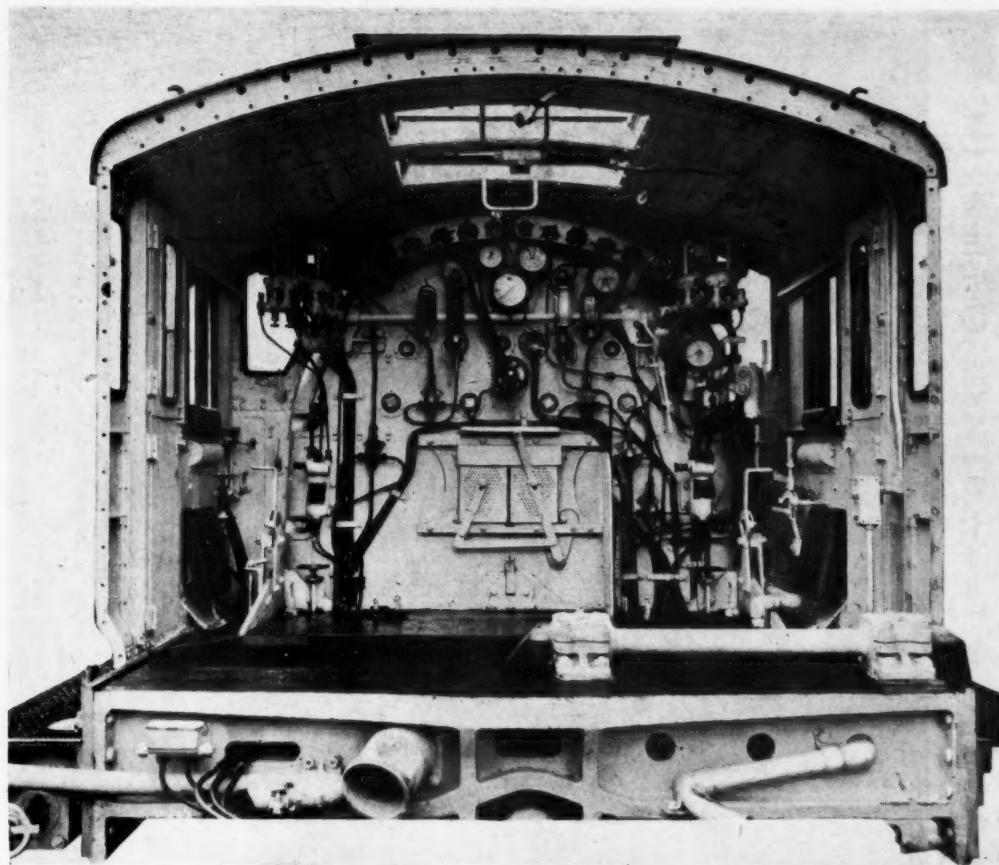
The vacuum brake is arranged to operate on the front engine unit, with steam and hand brake for the hind unit; vacuum brake is provided for the train. The equipment on the front unit includes two 21 in. diameter cylinders, and control is effected by a Gresham & Craven 25/20 "S.J." combination ejector with automatic steam-brake valve. The water tanks and bunker, of Dalzo copper-bearing steel plates, are specifically designed for fabrication by electric-arc welding. Particular attention has been paid to the staying of the tanks and the attachments to the framing.

The appearance of the locomotives is enhanced by the shaping of the outer ends of the tanks. A removable hinged plate is fitted between the hind engine unit and the boiler cradle, to prevent coal dust from reaching the axle boxes.

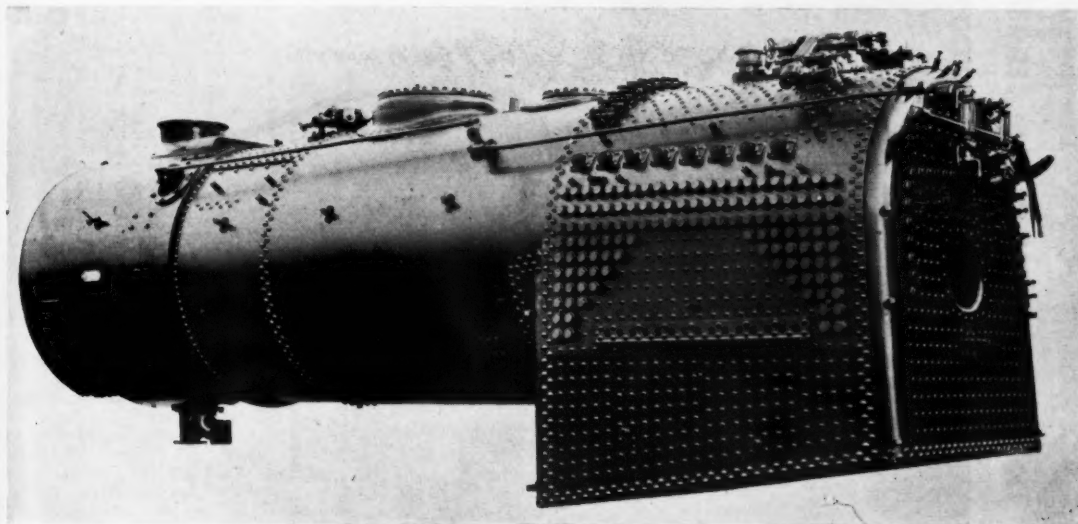
It is expected that on occasions these engines will haul an auxiliary water tank wagon, and most complete arrangements of piping and shut-off valves have been included so that at any time feed water can be taken from either front or hind tanks or an auxiliary tank wagon, individually or collectively. The tank wagon can be at either end of the locomotive.

Alliance top-operated automatic couplers of the S.A.R. standard type, with 8 in. x 6 in. shanks are carried on long draw-bars, pulling on a yoke secured between the outer coupled wheels and the cylinders. They contain three nests of Spencer Moulton rubber springs.





*General view of cab showing various control levers*



*Firebox, boiler barrel, and smokebox, with mountings*

# Transportation Directorate, Headquarters, Allied Land Forces, S.E.A.C., Christmas, 1945



*A group taken at Singapore on Christmas Day, 1945, of the Transportation Directorate, Headquarters, Allied Land Forces, South East Asia Command. Most of the members photographed are members of the staffs of the four main-line railway companies, and have seen service in that theatre ranging from three years to three months*

*Back row :* Captain Benham, Captain Day, Captain Hughes, Sapper Francis, Sapper Smith, Lance-Corporal Isaac, Corporal Swinscoe, Lance-Corporal Fryer, Lance-Corporal Brittain, Corporal Pike, Sapper Hillyard, Corporal Murphy, Lance-Corporal Melbourne, Lance-Corporal Martens, Sapper Hudson, Lance-Corporal Blackburn, Corporal Farndon, Lance-Corporal Dowding, Captain Newing

*Second row :* Captain Pollard, Captain Cresswell, Staff-Sergeant Johnson, Captain Hancock, Major Warren, Sergeant Bevis, Sergeant Hamer, Sapper Rough, Major Acland, Captain Vazifdar, Lance-Corporal Haberfield, Corporal Swesdy, Sapper Anderson, Warrant Officer, Class II, Frost, Lance-Corporal Richardson, Sapper Andes, Warrant Officer, Class I, Bryant, Sapper Martin, Lance-Corporal Heffer, Sapper Poole, Sapper Rose, Sergeant Mellors, Staff-Sergeant Terry, Havildar Singh, Sapper Ockleton, Sapper Harrison

*Front row (seated) :* Major Neame, Major Marklew, Major Paterson, Lt.-Colonel Welch, Lt.-Colonel Jackson, Colonel Wheeler, Brigadier Leese, Colonel Pennant, Lt.-Colonel Woodbridge, Major Monk-Mason, Major Brudenell, Captain Stephenson, Staff-Sergeant Forman

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## RAILWAY NEWS SECTION

## PERSONAL

Mr. H. H. Dyer (Assistant Signal & Telegraph Engineer, L.M.S.R.) has been elected President, and Mr. A. Moss (Assistant to Engineer, Signals, London, L.N.E.R.) a Vice-President, of the Institution of Railway Signal Engineers.

**L.P.T.B. COMMERCIAL ADVERTISING**  
Mr. J. H. Brebner, O.B.E., Chief Public Relations & Publicity Officer, London Passenger Transport Board, will now take over, in addition to his present duties, control of the commercial advertising work of the Board.

Mr. Walter Gott, O.B.E., Commercial Advertising Officer, will retire on April 17. Mr. H. T. Beasley has been appointed Commercial Advertising Officer, to succeed Mr. Gott.

**L.P.T.B. STAFF & WELFARE**  
In view of the vacancy in the post of Chief Staff & Welfare Officer to the London Passenger Transport Board, it has been decided that, for the present, Mr. F. A. A. Menzler, Chief Development & Research Officer to the Board, will assist the Executive Officer for Staff & Staff Welfare generally in the consideration of matters of principle and policy.

Sir C. Geoffrey Vickers, V.C. (a member of the London Passenger Transport Board) is a member of the committee appointed by the Minister of Town & Country Planning to advise him on the appropriate machinery for securing concerted action in the implementation of a regional plan for London as a whole.

Sir Felix Pole, who last year relinquished the Chairmanship of Associated Electrical Industries Limited, and is now Deputy-Chairman of the company, and who was General Manager of the Great Western Railway from 1921 to 1929, has resigned from the Central Housing Advisory Committee. Lord Faringdon has been appointed to fill the vacancy on the committee.

The late Mr. George Hughes, who was Chief Mechanical & Electrical Engineer, L.M.S.R., from 1923 to 1925, left £32,127.

Captain H. L. Betteridge, M.B.E., M.I.A.E., Chief Engineer of Ribble Motor Services Limited since 1920, is retiring shortly.

The following members of the staff of the Great Western Railway Engineering Department have recently received awards: Lt.-Colonel A. N. Butland, R.E. (Assistant Divisional Engineer, Taunton, G.W.R.), O.B.E. (Military); Major K. H. Tredinnick, R.E. (Surveyor & Draughtsman, Wolverhampton, G.W.R.), M.B.E. (Military); Lt.-Colonel W. J. Scott, R.E. (Assistant Divisional Engineer, Neath, G.W.R.), O.B.E. (Military); Major J. R. Hammond, R.E. (Assistant, Divisional Engineer's Office, Bristol, G.W.R.), M.B.E. (Military); and Lt.-Colonel F. J. J. Prior, R.E. (Assistant Divisional Engineer, Plymouth, G.W.R.), O.B.E. (Military).

Mr. W. J. Sawkins, Assistant Accountant, Southern Railway, who, as recorded in our February 15 issue, has been appointed Chief Accountant, as from April 1, entered the railway service in 1898, when he joined the staff of the Secretary & Accountant of the East & West Junction Joint Committee. He obtained experience successively in coaching audit, goods audit, station audit, general accountancy and secretarial work. In 1911 he

adopted by the funds of the other main-line companies. Mr. Sawkins has also been, since 1928, Secretary of the L.B.S.C.R. Pension Fund, which comprises the wages staff of the former L.B.S.C.R.

Mr. Edwin G. Baker (Chairman of the Moore Corporation Limited, Toronto) has been appointed a Director of the Canadian Pacific Railway Company, to succeed the late Major General F. S. Meighen.



Mr. W. J. Sawkins  
Appointed Chief Accountant,  
Southern Railway

was appointed Assistant Secretary to the Isle of Wight Central Railway, and in 1920 was promoted to be Secretary & Accountant. Mr. Sawkins was also the Secretary & Accountant of the Sheffield District Railway until its absorption by the London & North Eastern Railway Company. When in 1923 the Isle of Wight railways became part of the Southern group, Mr. Sawkins was appointed Statistical Assistant to the Chief Accountant, Southern Railway. He instituted the Statistical Office of that company and became Assistant Accountant (Statistics) in 1925. He was appointed Assistant Accountant of the company in 1928. On the formation of the Southern Railway Superannuation Fund in 1927, Mr. Sawkins was appointed its first Secretary, and he has continued to hold that office until the present time. It will be remembered that the Southern Fund originated the Joint Annuity scheme by which a member can convert his annuity into a joint annuity for himself and his wife or dependant relative. This has proved very popular with the members and has since been

The following announcement appears in the Supplement to *The London Gazette*, dated March 5, under the heading of Territorial Army—Royal Engineers: Engineer & Railway Staff Corps:—

Lt.-Colonel Sir Theodore E. Thomas, Kt., C.B.E. (313550) resigns his commission, March 6, 1946.

Sir Theodore Eastaway Thomas retired last October from the position of General Manager, London Passenger Transport Board.

The following announcement appears in the Supplement to *The London Gazette*, dated March 5, under the heading of Territorial Army—Royal Engineers: Engineer & Railway Staff Corps:—

Major H. E. O. Wheeler (69947) resigns his commission, March 6, 1946.

Mr. H. E. O. Wheeler, M.V.O., O.B.E., retired last October from the position of Deputy Traffic Manager, Southern Railway.

## NATIONAL COAL BOARD

The Minister of Fuel & Power stated in the House of Commons on March 7 that the following had accepted his invitation to serve on the National Coal Board as soon as the Coal Industry Nationalisation Bill becomes Act of Parliament:—Lord Hyndley (Chairman) (honorary Commercial Adviser to successive Governments, including the two Labour Governments, for a continuous period of more than twenty years up to 1938; first Controller-General, Ministry of Fuel & Power; since 1943 Chairman of the London Coal Committee of the Combined Production & Resources Board); Sir Walter Citrine (General Secretary, Trades Union Congress); Mr. Ebby Edwards (General Secretary, National Union of Mineworkers); Professor Sir Charles Ellis (Professor of Physics, Kings College, London, and Scientific Adviser to the Army Council since 1943); Mr. J. C. Gridley (lately Chairman of the European Coal Organisation; Director of Guéret, Llewellyn & Merrett Limited and other companies engaged in marketing coal both for home and export trade); Mr. L. H. Lowe (Chartered Accountant, partner in Thomson McLintock & Company; Director of Finance, Ministry of Fuel & Power, 1943-45); Sir Charles Reid (mining engineer, who was Chairman of the Reid Committee); Mr. T. E. B. Young (mining engineer; Managing Director, Bolsover Colliery Co. Ltd.). The Minister said that he was not yet in a position to announce the name of the Vice-Chairman, who will be the ninth member of the board and will be selected for administrative and organising experience and capacity. The board cannot be constituted formally until the Coal Nationalisation Bill becomes law.





**Mr. F. R. Stockdill**

Appointed Assistant Accountant,  
Southern Railway

Mr. F. R. Stockdill, who, as recorded in our February 15 issue, has been appointed Assistant Accountant, Southern Railway, from April 1, entered the service of the L.S.W.R. in 1921. After three years in the Locomotive Department he was transferred to the Chief Accountant's Office, after the formation of the Southern Railway. In December, 1940, Mr. Stockdill was seconded to the Transportation Accounts branch of the Ministry of Supply. He was released from his duties with the Ministry in April, 1943, and in November of the same year was appointed Special Assistant to the Chief Accountant, Southern Railway.

Mr. John Pike, O.B.E., M.Inst.T., Chairman of the Shropshire & Montgomeryshire Light Railway Company, whose death we recorded last week, retired in 1928 from the position of Goods Commercial Manager, L.M.S.R. Mr. Pike was educated at the City of London School. He joined the



**The late Mr. John Pike**

Goods Commercial Manager,  
L.M.S.R., 1924-28

L.N.W.R. in 1884, in the Mineral Office. Later he was transferred to the Outdoor Goods Manager's Office, and subsequently to the department of the Superintendent of the Line. In 1902 he was made Personal Assistant to Mr. W. A. Jepson (then Mineral Traffic Manager), and in 1909 he became Chief Clerk to the then General Manager (Sir Frank Ree), which position he vacated on his appointment in 1914 as Assistant Goods Manager. On the formation of the Ministry of Transport in 1919, Mr. Pike was transferred to it as Director in Charge of the Rates Branch. He was also Chairman of the Irish & English Traffic Rates Conference. He returned to the L.N.W.R. in November, 1921, and two months later was appointed Assistant to the General Manager (Rates & Fares). He was appointed Goods Commercial Manager, L.M.S.R., in 1924. Mr. Pike was Chairman of the Railway Clearing House Goods Managers' Conference for 1927. He became a Direc-



**Mr. C. W. Stokes**

Appointed Public Relations Officer for Europe,  
Canadian Pacific Railway

tor of the Shropshire & Montgomeryshire Light Railway Company in 1930, and was Chairman from 1942 until the time of his death.

#### MR. JOHN PIKE: AN APPRECIATION

Many of the older school of railwaymen would read with a pang of regret your announcement that Mr. John Pike was no longer with us. May one of his colleagues on the Goods Managers' Conference in the spacious days before the 1923 amalgamation jot down one or two recollections? Mr. Pike received a thorough grounding in the rudiments of railway work on the old London & North Western. He had the advantage of serving on the personal staff of Sir Frank Ree, who did not make the mistake of doing too much himself when he was General Manager, but left a great deal of responsibility to his office. That experience of managerial affairs stood Mr. Pike in good stead when he came to deal with the complicated problems of the



**Mr. J. Rankin**

Appointed Works Superintendent, Locomotive Works,  
Crewe, L.M.S.R.



**The late Mr. Joseph Harrison**

Stationmaster, Euston, L.M.S.R.,  
1937-46



**Mr. J. C. Bailie**

Appointed Assistant to Traffic Manager  
(Operating), G.N.R.(I.)

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Goods Department. His opinions carried weight in the conference room, because he was eminently fair-minded and tried to see both sides of controversial subjects. He spared no trouble to get his facts right. Pleasant memories still linger of a visit paid with him to Teesside more than 25 years ago. Our purpose was to study the system of the North Eastern Railway of regulating mineral traffic for iron and steel works. We had an admirable tutor in Mr. J. T. Naisby, then District Goods Manager, Middlesbrough, and came back converted to belief in the joint benefits of the regulatory methods to the railway and the traders. Later Mr. Pike became immersed in freight rates inquiries and contacts with him were mainly through the Institute of Transport, the meetings of which he used to attend assiduously, enjoying the proceedings to the full and delighting to have a word with some of his old friends afterwards. To know him was to like him and his was surely a happy life.

Mr. Charles W. Stokes, F.R.G.S., F.R.E.S., who, as recorded in our January 25 issue, recently was appointed Public Relations Officer for Europe, Canadian Pacific Railway, entered the service of the Canadian Pacific in London, after some journalistic training, in 1907. Subsequently he resigned, and went to Canada. In 1912 he rejoined the company's service, in the Land & Irrigation Department, Calgary, Alberta. He was transferred to the Publicity Branch, Department of Natural Resources, and in 1917 went to Montreal as Assistant General Publicity Agent. In 1929 he was appointed Publicity Agent, London, and, in 1945, Public Relations Officer for Europe. Mr. Stokes was President of the Advertising Club of Montreal, 1927-29, and in 1929-30 of the American Association of Railway Advertising Agents. In 1945-46 he was Chairman of the Publicity Club of London. He is a Fellow of the Royal Geographical Society, Royal Empire Society, and the Incorporated Advertising Managers Association; and is the author of three books of travel.

Mr. J. Rankin, A.M.I.Mech.E., M.Loco.E., M.I.P.E., Works Superintendent, Locomotive Works, Derby, L.M.S.R., who, as recorded in our March 8 issue, has been appointed Works Superintendent, Locomotive Works, Crewe, served his apprenticeship with Andrew Barclay, Sons & Co. Ltd., of Kilmarnock. He served from 1914 to 1919 with the Forces, and in 1920 joined the Midland Railway at Derby. In 1923 Mr. Rankin was appointed Works Inspector at Derby; in 1928, Assistant to the Works Manager, Crewe; in 1932, Assistant to the Works Superintendent, Crewe; in 1934, Assistant Works Superintendent, Horwich; and in 1938, Assistant Works Superintendent, Derby. From September, 1939, until July, 1940, he acted as Works Superintendent, Derby, during Colonel G. S. Bellamy's absence on active service. Mr. Rankin was appointed Works Superintendent, Locomotive Works, Derby, in May, 1941. He is an Ordinary Member of Council of the Institution of Locomotive Engineers.

We regret to record the death on March 18, at the age of 56, of Mr. Joseph Harrison, M.B.E., Stationmaster, Euston, L.M.S.R., since 1937. Mr. Harrison joined the Furness Railway at Ravenglass as a porter clerk at the age of 14. After serving at several other stations, he was appointed Stationmaster's Clerk at Barrow, which post he left to join the Army in

1914. After serving in France, the Dardanelles, Egypt, and Salonika, he returned to Barrow in 1919 and became Assistant Stationmaster. Subsequently he was made Senior Relief Stationmaster, Furness & West Cumberland Section, L.M.S.R.; and he was appointed Stationmaster, Carnforth, in 1925. He served in a similar position at Southport (Chapel Street) from 1931-34, and at Birmingham (New Street) from 1934 until his appointment to Euston in 1937. Mr. Harrison was a pioneer of the railwaymen's mutual improvement classes. He received many royal gifts, including a pair of cuff links from the Duchess of Kent. Throughout the war period he received and saw off many notable persons at Euston (this route was used because of the closure of the East Coast ports). Mr. Harrison was made an M.B.E. in the King's Birthday Honours, 1943.

Mr. J. C. Bailie, Assistant Chief Inspector, Traffic Department, Great Northern Railway (Ireland), who, as recorded in our February 8 issue, has been appointed Assistant to the Traffic Manager (Operating), a position which, under the scheme of co-ordination effected in July, 1944, also embraces the traffic operating control of the Belfast & County Down Railway, was educated at Malone School and Royal Belfast Academical Institution. He joined the G.N.R. (I.) in 1931, as a traffic apprentice, and gained experience in traffic working at the company's stations and in the various sections of the Traffic Manager's Department. He was transferred to the General Manager's Office in Dublin in 1938, and received training there. He was transferred in April, 1941, to the office of the General Manager's Department established in Belfast to deal with military and other matters affecting the undertaking in Northern Ireland, and in July, 1943, he was appointed as Assistant Chief Inspector in the Traffic Department. To obtain experience of British railway operation, Mr. Bailie was attached to the Chief Operating Manager's Department, L.M.S.R., from May, 1944, until December, 1945.

#### SWEDISH TRAMWAYS DELEGATION ENTERTAINS L.P.T.B. OFFICERS

The delegation from the Swedish Tramways undertaking visiting the London Passenger Transport Board, with a view to establishing an underground railway system in Stockholm, to which we made reference last week, entertained officers of the L.P.T.B. at the Savoy Hotel, London, on March 11. Mr. Ribbing, leader of the deputation, expressed thanks and gratitude for the help and facilities extended to it during its visit. He said it had been impressed with the high standard of the L.P.T.B. system, particularly as only a minimum amount of maintenance had been possible during the war. In conveying the thanks of the delegation, especially to Messrs. P. Croom-Johnson, Chief Engineer (Civil & Electrical), W. S. Graff-Baker, Chief Mechanical Engineer (Railways), Evan Evans, Operating Manager (Railways), F. G. Maxwell, Assistant Superintendent (Outdoor) (Railways), and J. H. Brebner, Chief Public Relations & Publicity Officer, Mr. Ribbing assured the Board's officers of a great welcome to Stockholm if they should visit that city. The delegation left London the next day for Paris, to study the Metro system.

Mr. N. W. Hall has been appointed Assistant Traffic Superintendent, Palestine Railways.

Mr. H. J. King has been appointed District Traffic Manager, Sudan Railways.

Mr. H. J. Peacock, who recently retired from the position of Assistant Superintendent of the Line (Cardiff), Great Western Railway, at a meeting of the Headquarters and Divisional Officers of the Superintendent of the Line, Great Western Railway, on Wednesday, was the recipient of a presentation on behalf of all his colleagues. Tributes to Mr. Peacock's personality and professional qualifications were made by Mr. Gilbert Matthews, Superintendent of the Line, Mr. S. G. Hearn, Principal Assistant to Superintendent of the Line, and Mr. D. Blee, Principal Assistant to Chief Goods Manager, and a number of Divisional Superintendents.

Mr. W. S. Roberts has retired from the position of Managing Director of the Railway Signal Co. Ltd., but remains a Director. The board has recorded its appreciation of the services which he has rendered during his 48 years' association with the company. Mr. Roberts has been succeeded by Mr. Leigh Ollershaw, late Director & General Manager, who has been associated with Mr. Roberts' activities in the company for many years.

### Inter-Railway Golf Trophy

*Presented by Lord Portal*

The Rt. Hon. Viscount Portal, P.C., D.S.O., M.V.O., Chairman of the Great Western Railway Company, has presented a silver-gilt cup and cover (Charles II pattern) as a trophy for annual competition between the golfing societies of the main-line railway companies.

Six matches will be played (that is, each society playing against each of the other three) by teams of not less than eight or not more than twelve players, all of whom must be members of the London or southern area golfing societies, as distinct from "all-line" societies. The respective captains will elect the teams, and the members' names and handicaps will be exchanged by the pairing teams before the match as has been done in the annual society games.

The matches are to take the place of the previous annual fixtures, and will be held in May, June, and July on a course chosen by the "host," each side playing the other in the order decided by the draw.

Match play—singles—will be over 18 holes, off handicap (limit 20), with the score reckoned in points, that is, two points to the winning team, or a point each for drawn matches. If two teams score an equal number of points, they will replay on a course and date mutually agreed. If the result of this event is a tie, the side with the best aggregate score for the individual matches will secure the trophy. The draw for the first six matches is:—

Host	Guest	Month
G.W.R.	v. L.N.E.R.	May
Southern Railway	v. L.M.S.R.	May
L.N.E.R.	v. Southern Railway	June
L.M.S.R.	v. G.W.R.	June
G.W.R.	v. Southern Railway	July
L.N.E.R.	v. L.M.S.R.	July

As at least six matches have to be played each season, it is necessary for two of the teams to be hosts twice during any one season. It has been suggested that this should be undertaken alternately by arrangement between the four societies after the first season, when the hosts are as drawn above.

## Great Northern Railway Company (Ireland)

*Year's results—The White Paper—Basis of negotiations—Road transport—Improved services—Abolition of second class—War achievements*

The annual general meeting of the Great Northern Railway Company (Ireland) was held on February 27 at Grosvenor Minor Hall, Belfast. The Rt. Hon. Lord Glenavy, Chairman of the Company, presided.

The Secretary, Mr. F. C. Wallace, having read the notice convening the meeting,

The Chairman said: Ladies and gentlemen; copies of the accounts have been in your possession for some time now, and, with your permission, I shall take them as read. At our last meeting I stated it was hardly to be expected that receipts for the current year would reach the level of the 1944 figures. As you will have seen from the accounts, net income at £577,922 is £186,809 less than the record figure attained in 1944. After deducting the amounts required for fixed charges, taxation, and contingent liabilities, and adding the balance brought forward from last year, there is available for distribution £264,826. After payment of dividends of 4 per cent. on the guaranteed and preference stocks, there remains a balance of £150,088, or £14,507 less than in the previous year.

The board is recommending that the ordinary dividend be maintained at 2½ per cent. absorbing £101,267 of this sum, and that a bonus of ½ per cent. be distributed at a further cost of £20,253, leaving a balance of £28,568 to be carried forward into this year. That the balance available should be only £14,507 less, although net income was £186,809 less, is due mainly to a reduction in the provision to be made for income tax and excess profits tax of £145,147. I informed you at our last meeting that the standard for excess profits taxation payable in respect of our business in Northern Ireland had been fixed. The amounts due under this head for the periods to December 31, 1944, having been agreed, have accordingly been paid. With diminished earnings in Northern Ireland the burden of this item of taxation for 1945 was lightened proportionately.

The Chancellor of Exchequer in October last announced that nothing more will be paid under the head of deficiency payments in respect of any accounting period after December 31, 1946. Hitherto, the law provided that if, in any subsequent year, profits fell below the agreed standard, thus showing a deficiency, it was permissible to reclaim such deficiency from the excess profits taxation already paid. If, therefore, net receipts, this year, fall below the standard, as seems probable, we will still be able to claim in respect of the deficiency, but not after the end of this year. It is the Exchequer which will have the better of this arrangement.

### The White Paper

Next to the financial results for the year proprietors will be most interested in the White Paper issued by the Government on public transport in Northern Ireland. The White Paper is in two parts: a summary of past developments, and a proposal of negotiations now for the purpose of arranging a merger between the Road Transport Board and the railway companies. Your directors have no hesitation in advising you that, from the point of view both of the public and of the transport undertakings, unified operation of the constituent elements in the pre-

sent public services is the most practical course. The Government's announcement of policy is necessarily stated in general terms, and the negotiations which it contemplates will include many matters of detail. This company's statutory position differs from that of the other elements affected by the proposal and will need special consideration. Predominant concern in the negotiations should be with the devising of a transport organisation which will give the public a system as sound, economically, as the prescribed conditions allow, with fair financial treatment for each of the elements called to contribute to it. When such an organisation has been devised, the precise adaptation to it of the several elements involved should not give rise to any difficulty which reasonable goodwill and ingenuity would be unable to solve. Whereas to proceed by stressing first the particular problems of any particular element might delay, if not defeat, the Government's intentions, and this transport question does not permit of delay. The special circumstances attaching, for instance, to the Great Northern are in general self-evident, and no party to the negotiations will be under the delusion that they can be disregarded in them.

### Basis of Negotiations

As for the summary of past developments, I will only say that we would have written it differently; we would not have considered the past as altogether so past, nor the outline of the future as quite so positively discernible. It is, however, the intended negotiations which we shall treat as the business to be done, only making it clear that we will enter on them bound by no views either of the past or the future except that each party has a contribution it must make to the installation of the best practicable service at the lowest attainable cost, cost being reckoned in such full accountancy as will, for example, balance an asset of the type of "door-to-door convenience" by the liability for death and injury caused in getting from door to door, and that each party must be remunerated in equitable share for its contribution.

Looking again at the account, the decline in net receipts from railway working is attributable, on the one hand, to a falling off in traffic carried by goods trains consequent on the withdrawal of military forces from Northern Ireland and the curtailment or cessation of numerous activities there directly associated with the war, and on the other hand, to a substantial increase in expenditure under items such as salaries and wages, fuel, and supplies. It will be understood that with wages boards and tribunals dealing with additions to salaries and wages, while control prices have to be paid for most supplies, the company was left virtually no powers over the bulk of its working costs. The reduction in gross receipts amounted to £75,645, and expenditure was greater by £142,131, the net railway receipts thus being £217,776 less than those of the previous year. From passenger-train traffic the gross receipts were practically the same, the slight increase from ordinary passenger traffic being offset by a fall in income from season and workers' tickets, the latter being accounted for by a shift in population after the closing

down of numerous establishments engaged principally on war work.

There was a substantial reduction in the quantity of military traffic conveyed by goods trains, and the tonnage of normal merchandise traffic was heavier than in the previous year, but not to an extent sufficient for balancing the loss in military traffic. The number of live stock carried was satisfactory, showing an increase of 18½ per cent. on the carryings of 1944. Timber and coal being in short supply, the traffic in these and also in "other minerals"—principally sand—showed a decline of about 20 per cent.

### Road Transport

Road transport continued to make its growing contribution to income with an improvement of £30,348 in its net receipts, due mainly to increased traffic arising from the expansion of our services consequent on the greater supplies of fuel oil and petrol which we were able to obtain. Oil and petrol, however, are becoming increasingly available also for private cars and lorries. It will therefore need both the co-operation of the public and also skilful management to maintain the position which our road services have achieved. Many of the buses and lorries have been working to the limit of their capacity during the emergency, and are now reaching the end of their useful life. Every endeavour is being made to obtain replacements for our road fleet, but, although a limited number of new lorries has been procured, a general delivery of vehicles is not yet in sight.

On the surface the results of working the hotels and catering department may appear somewhat disappointing, a decline being shown in net receipts of £6,097. This has been arrived at after making provision in a much larger sum for any liability, over and above that covered by insurance, which may rest with the company in connection with the unfortunate typhoid experience in 1944. In test cases the company was exonerated on the score of negligence, but was held liable for damages on the count of breach of warranty. Extended precautions have been taken to guard against any further incidents of this kind in our services, though no precautions could be taken which would give absolute assurance against their imposing on the company what is a technical rather than a moral liability.

Despite the shortage of almost every item of supplies, our hotels and catering services have continued to afford a high level of comfort and cuisine, and profits have been well maintained despite ever increasing costs. We have reason to think that a reserve of custom and goodwill has been built up on this side of our business, which will be valuable. Our Dublin-Londonderry services were improved in the summer by the provision daily of a through express train in each direction, equipped with dining-car facilities. This will be the regular practice, so long as the traffic justifies it.

### Improved Services

At the beginning of the tourist season last year, we were able to put into service two modern trains forming the "Bundoran Express," which appear to have given a considerable measure of satisfaction. The aim was to develop traffic to and from South County Donegal, via Ballyshannon, in preference to the circuitous route, via Strabane, as it resulted in complete freedom from Customs and permit examinations, and for most places, considerably shortened the time of the journey. A similar service, operated by



railcars, has been introduced during the winter months, thus giving an all-the-year round express service. The incalculable delays to, and interruptions of, traffic on our relatively short hauls through the requirements of Customs are almost heart breaking. Such requirements at their present height render speedy and punctual running unattainable and, if they are not soon and substantially abated, will sap the energies of even the stoutest-hearted of our officials.

The operation of different policies as to summer time in Eire and in Northern Ireland also creates special difficulties for this company, aggravated when the Governments give only short notice of their intention. Timetables then have to be hastily adjusted, but if the alterations prove unsuitable in working they cannot effectively be amended until the next working timetable is prepared.

The increased receipts from first and second class travel, which were so marked during the war, were well maintained last year. We are particularly concerned to retain this traffic in face of the increasing use of private cars, and for this purpose new coaches of improved design are being constructed. This work is being delayed by slow deliveries of materials, and the overhauling of existing coaches is retarded partly by the difficulty of withdrawing them from service because of heavy demand, and partly by a bottleneck restriction in supplies of upholstery material. In these circumstances it is particularly unfortunate that the company has to suffer and the public put up with the wanton damage to our rolling stock.

#### Abolition of Second Class

Proprietors are aware that this company is one of the few which still provides three classes for its passengers. Long study has been given to a proposed withdrawal of second class facilities, with the result that it has been decided to abolish that class so soon as it becomes possible to obtain the required materials for the alterations to rolling stock. The change we hope will attract many who now use second and third class to the superior comfort which will be available in our first class carriages. Incidentally, should any proprietor be able to devise an original and acceptable alternative to "first" and "third" class as the future designation of the two types of accommodation, he will be assured of mention in the company's second centenary book.

The work of repainting many of our stations, long overdue but held up because of shortage of paints, is now being overtaken. Extensive alterations are being carried out at our stations in Belfast and Dublin which, when completed, will afford more spacious circulating areas and modern booking offices, cloakrooms, and parcels accommodation. Here, too, progress is dependent on supplies of materials.

#### War Achievements

Since there may not be another appropriate opportunity it is due to some 10,000 Irish railwaymen that I should give you a summary of what they were able to accomplish during the late most catastrophic of all wars. The war came when wisecracks had long been asserting that railways were out-moded, and when the struggle against the worst effects of years of public apathy, and of instability in economic policy, had sapped railway resources. Moreover, there was no time in the war at which the railways were able to provide themselves with additional rolling stock. Nevertheless, the extensive

rapid and closely-timed movements by rail of British, American, and other Allied troops to and from Northern ports, sometimes in units up to 50,000 men, together with the dispersal daily from those ports of foodstuffs, stores and equipment in vast quantities and of every description to depots, large and small was taken by the railwaymen in their stride. Simultaneously, unprecedented demands were being met for extra trains to convey a host of war-workers and displaced personnel from and to Belfast and dispersal centres, and for additional goods trains for the transport of hundreds of thousands of tons of cement, sand, steel, timber, stones, tar, coal, cranes and bulldozers for camp and aerodrome and factory construction or maintenance. All this was in addition to the normal services.

Numerous sidings, depots, stations, signal cabins, crossing loops on single-line sections and many other construction works were undertaken to cope with the requirements of the services and the public, and numerous stations were enlarged to accommodate longer trains.

The convoy system, involving the periodical arrival of large numbers of ships, with the urgent need for releasing ships without delay, presented the railways with frequent heavy peak demands, several hundreds of wagons passing daily to and from the ports, particularly Belfast. On one occasion no less than 1,000 wagons, roughly 20 per cent. of the total stock in Northern Ireland, had to be accumulated within a few days to clear a specially important shipment. Daily throughout the war winters 20,000 gal. of milk were sent by rail to Larne for Scotland. Up to 350 wagons of live stock a day were dealt with at Maysfield Cattle Depot. Three special trains daily in each direction were run for the Lockheed Factory at Langford Lodge. Throughout the war thousands of special trains had to be operated for conveying military passengers and munitions in connection with the arrival, training and despatch of numerous divisions sent to this country. The volume of passenger train traffic in Northern Ireland was 230 per cent. on the pre-war amount, and that of the freight traffic was 225 per cent., all this multiplied demand being met with no more than the number of locomotives, carriages and wagons which was available in 1938—and which had to be used in its 1938 condition.

In all this varied activity, your company took its full share, and the public and the authorities might well reflect that when the time came the railways, maintained at a sacrifice by the proprietors during many years before the war, were still there to fulfil their function in a manner from which the meanness of punt-duns on transport cannot detract.

As to the future: the White Paper has envisaged its problems; we can only declare ourselves ready to co-operate in their solution—as we have been ready in, perhaps, too simple an optimism, for all of the past eleven years. I may add, now that the principles of the White Paper have been approved by both Houses of Parliament, that they involve two matters which are essential, the rest being more in the nature of detail. One is unity of operation between the railway companies and the road board, the other is the apportionment of the proceeds of such operation between the interested parties. That apportionment will necessarily take time to adjust, there being many aspects to consider. But there seems no reason in common sense why the railways and road board should not at once begin on a

voluntary basis that unity of operation which is the foundation of the policy now endorsed by Parliament. Thereby will be saved the duplication and overlapping of services, with its waste of fuels and supplies and avoidable wear and tear to equipment which in the best of times is foolish, but in a period of acute shortages would in the public interest not be prolonged for one unnecessary day. The course I suggest cannot prejudice the general application of the principles of the White Paper; indeed it should greatly facilitate their practical working out, and I hope accordingly that when we approach the other parties to adopt it they will readily see their way to do so.

The report and accounts were adopted.

### Belfast & County Down Railway Company

The annual meeting of the Belfast & County Down Railway Company was held in Belfast on February 28, Mr. James Hurst, Chairman of the company, presiding.

The Chairman, at the outset of his speech, said he welcomed the proposal that a merger of the three Northern Ireland railway companies and the Northern Ireland Road Transport Board should begin at once on a voluntary basis. He considered the decision a sound one, as only by effecting a merger was there a reasonable prospect of any future for the transport of the country. In view of the rapid deterioration in the position of public transport which was taking place, and would continue, he urged upon the Government the paramount need of allowing no delay in the negotiations.

In moving the adoption of the report and accounts, the Chairman said that the gross receipts for the year declined by £60,476, or 10.5 per cent., as compared with 1944. Expenditure fell by £22,521, or 4½ per cent. The total net income of £40,283 was £36,970 less than in the previous year.

Gross railway receipts from passenger traffic fell by £41,367, and from goods traffic by £16,267, largely because of the withdrawal of troops and the cessation of industries directly connected with the war. The increasing use of private cars and the extension of bus services was affecting the season ticket revenue.

There was a reduction in expenditure on railway working of £28,343, but it had been brought about largely by the decrease in the amount of work done. The company's liability for taxation had been greatly reduced, and in the past year it had been necessary to set aside only £2,000 for that purpose, as against £43,000 in the previous year. The company had placed a further sum of £20,000 to the credit of contingencies reserve to augment the fund which was being accumulated in respect of any liability which might arise in connection with the accident on the Bangor branch in January, 1945.

The directors were examining proposals for operating diesel railcars on the Bangor branch, to serve intermediate stations and permit the running of through steam trains between Belfast and Bangor. The automatic signalling arrangements on the branch were being brought into conformity with modern British practice as rapidly as possible. The company appreciated that the Bangor branch probably offered the best prospect of development from improved services, and that fast, comfortable, and frequent rail facilities between Belfast and Bangor would meet with a large measure of public support and possibly create new traffic.

The report and accounts were adopted.

## Mersey Railway Company

The annual general meeting of the Mersey Railway Company was held on March 15 at Winchester House, Old Broad Street, London, E.C., Mr. John Waddell (Chairman of the company) presiding.

The Secretary of the company, Mr. J. E. Blacklin, read the notice convening the meeting.

The Chairman, in a statement circulated with the report and accounts, said: "No alterations in the financial arrangements with the Government have been made during the past year and the accounts are again presented in the modified form approved by the Minister of War Transport. The fixed rental remains at £109,976, and it is proposed to pay a dividend of 2½ per cent. on the consolidated ordinary stock, as compared with 2½ per cent. for the year 1944."

The past year has been a momentous one, and it is gratifying that hostilities in both Europe and Asia have now ceased. During the war the railway has carried a large volume of traffic, but I am not able to quote actual figures as Railway Clearing House returns regarding through traffic from other companies' lines are not available. It is estimated, however, that the traffic carried during the year is approximately 54 per cent. greater than in 1938, which was the last complete year before the commencement of the war. The benefit of this increased traffic has, of course, gone to the Government due to the operation of the fixed rental agreement.

It is pleasing to note that our records indicate the traffic to and from the Wirral Section of the L.M.S.R. company has developed on the lines that were envisaged when the through electrified service of trains was inaugurated in 1938, and which would in the normal course have been of considerable benefit to your company. The maintenance of rolling stock, plant and premises, has been carried on as well as possible under the prevailing conditions of scarcity of materials and labour.

You will no doubt have seen in the press that part of the programme of the present Government is the nationalisation of the railways, but no indication has yet been given of the form this will take. It is difficult to see what advantage will accrue from this step either as regards efficiency or economy of operation or what advantage the public will gain from it. The road passenger and goods undertakings, it is understood, are also to be nationalised. It appears that the resultant transport venture will therefore be an enormous and unwieldy concern which will be very difficult to control efficiently. However, to date, no proposals have been put forward for the taking over of the Mersey Railway, but you may rest assured that the matter is one which will receive the close attention of the board when the occasion arises.

Agitation has continued locally during the year for the Mersey Tunnel (Queensway) to be freed from tolls and, according to the press, a committee of representatives of the Liverpool and Birkenhead Corporations waited upon the Parliamentary Secretary to the Minister of War Transport in London in November last and put forward the plea that the tunnel tolls should be abolished and that the responsibility for the outstanding debt on the undertaking should be taken over by the Government and that, in addition, the Government should make an annual con-

tribution towards the maintenance costs of the undertaking. In refusing to accede to the application, the Minister stated:—

"On present information, therefore, the Minister regrets that he does not feel justified in adopting the committee's proposal. At the same time he considers that the effects of war conditions upon the committee's financial situation are such as to make it inexpedient to base a final decision upon prevailing circumstances, and he would be prepared to consider the matter afresh after a few years' experience of more stable post-war conditions."

Proposals to run through local bus services *via* the tunnel when it is toll free are being mooted, but it is inconceivable that the position of the undertakings who have satisfactorily maintained essential passenger transport services between the two sides of the river for so long a period can be ignored. So far as the Mersey Railway is concerned, the services rendered were acknowledged during the passage through Parliament of the Mersey Tunnel Act of 1925, and by the provisions embodied in the Act which was expressly inserted by Parliament for the protection of

the stockholders of the Mersey Railway.

The Mersey Railway and the ferry undertakings are fully capable of dealing with all the cross-river traffic available, including future requirements, and the introduction of a third passenger service would merely set up wasteful and uneconomical competition which would benefit no one. Incidentally, such bus services would undoubtedly cause considerable congestion in the streets, especially in the vicinity of the entrances in Liverpool and Birkenhead.

On the conclusion of the war, I would like again to express our appreciation of those men who have been serving in H.M. Forces, and also to take the opportunity of thanking the whole of the staff very sincerely for the good work done, often in difficult circumstances, during the past six years. Notwithstanding all the troubles encountered, the railway has been able to meet the requirements of the travelling public, and this is undoubtedly due to the excellent services given by the whole of the staff. It is to be hoped that the spirit of co-operation which has hitherto existed between the management and the staff will continue, to solve the problems of peace which now confront us.

The report and accounts were adopted.

## London Midland & Scottish Railway Company

A special general meeting of the London Midland & Scottish Railway Company was held at Euston Station, London, N.W.1, on Tuesday, March 19. Sir Robert A. Burrows, Chairman of the company, presided.

The acting Secretary, W. S. Geldard, having read the notice convening the meeting.

The Chairman said: Ladies and gentlemen; this meeting is held in accordance with the standing orders of Parliament and the general orders under the Private Legislation Procedure (Scotland) Act, 1936, to submit for your approval the following Bill and Provisional Order promoted by the company:—

1. The London Midland & Scottish Railway Bill.

2. The London Midland & Scottish Railway Provisional Order (Scotland).

I will deal first with the London Midland & Scottish Railway Bill. One of the objects of this Bill is to authorise the company to continue to take water from the River Soar, near Loughborough, to feed the troughs for locomotive purposes. Before the war and up to 1943, water for these purposes was supplied by the Loughborough Corporation at a cost of £1,600 per annum, but the corporation informed the company that it could not continue the arrangement, and application was made to the Minister of War Transport for authority to take the necessary water from the River Soar. The Minister agreed, and issued an Order accordingly, and works costing £7,000 were carried out by the company to obtain the supply. The Minister now desires to revoke the Order, which was a war emergency measure, and in order that the arrangement may be continued without hindrance it is necessary that permanent powers be obtained. The agreement of the Catchment Board responsible for the River Soar has been secured.

The Bill also provides for the compulsory acquisition of lands, the diversion of a public footpath and the construction of a footbridge over the River Erewash in connection with a scheme which has been

prepared for the modernisation of the up-track yard at Toton.

Powers are also sought to divert a little-used public footpath which passes under the main line at Loughton, near Bletchley. The object in diverting the footpath is to enable the company to fill in the under-bridge and thereby to avoid the reconstruction which would otherwise be necessary.

It is also necessary to provide additional siding accommodation at Siddick Junction, near Workington, and to deal with slips in the embankment at Clevee, near Cheltenham, and powers are included in the Bill for the acquisition of lands required for these purposes.

I turn now to the London Midland & Scottish Railway Provisional Order. The main purpose of this Order is to authorise the construction of a short length of railway, the acquisition of lands, and the diversion of a street. The proposed railway is a short loop line to connect the former Glasgow & South Western and Lanarkshire & Ayrshire Lines and powers for the acquisition of lands are necessary.

The company has under consideration the centralisation of the Civil Engineering Workshops and the Old Materials Depot at Gartsherrie in the County of Lanark, and powers for the acquisition of the necessary lands are required.

The only other item to which I need refer is the proposal to divert a street at Greenock. Following the collapse of a high retaining wall on the south side of the railway between Greenock Central and Greenock West Stations, the consent of the Greenock Corporation was obtained to a portion of a street called Shaw Place being utilised for the reconstruction of the wall. This resulted in the street being closed to vehicular traffic, and powers are required to confirm the diversion of the street and to secure the company's title to the land forming the site of the diverted road.

If there are no questions, I will move the first resolution: That the Bill now submitted entitled: "An Act to empower the London Midland & Scottish Railway Com-

pany to construct works and to acquire lands; and for other purposes," be and the same is hereby approved, subject to such additions, alterations and variations as Parliament may think fit to make therein.

Mr. G. R. T. Taylor: I have much pleasure in seconding the resolution.

(The resolution was carried unanimously).

I will now move the second resolution: That the Provisional Order now submitted entitled: "Provisional Order to empower the London Midland & Scottish Railway Company to construct a railway and to acquire lands; and for other purposes," be and the same is hereby approved, subject to such additions, alterations and variations as may be made during the progress thereof.

Sir Alan G. Anderson, G.B.E.: I beg to second the resolution.

(The resolution was carried unanimously).

### Extraordinary General Meeting

An extraordinary general meeting was held at Euston Station, London, N.W.1, on Tuesday, March 19. Sir Robert A. Burrows, Chairman of the company, presided.

The Acting-Secretary, having read the notice convening the meeting,

The Chairman said: Ladies and gentlemen, this meeting is held in accordance with Section 122 of the Public Health Act, 1936, and you are asked to give your approval in accordance with the requirements of the Act to a proposed sale to the Wolverton Urban District Council of all or any of the company's waterworks at that place. The many activities of the company include the supply, under Parliamentary powers, of water surplus to the company's own requirements, and at Wolverton supplies are given on a fairly large scale to the general public. For this purpose a network of water mains and other apparatus has been placed under the streets and elsewhere. The Urban District Council have approached the company with a proposal to take over these mains and the supplies given by means of them, but no agreement can be concluded without the authority of a general meeting of the company. The Wolverton Council's proposal is acceptable in principle and your authority is asked to the conclusion of the necessary agreement as required by the Public Health Act. Before putting the necessary resolution, I shall be pleased to answer any questions.

Mr. Robert Ashworth: Mr. Chairman, what do you mean precisely by "acceptable in principle," and what are the financial commitments involved.

The Chairman: The negotiations are only in the preliminary stage. We have not concluded, and, indeed, cannot conclude, without your concurrence, such an arrangement. It is an ordinary commercial transaction, but, owing to the particular construction of the power under which we act, it is necessary for us to obtain your consent to it. It is not a very large amount. It is very much to be desired that these water mains and other water works which lie under the streets controlled by the council should be their property rather than ours.

Mrs. Alexander: Do we benefit by it?

The Chairman: We benefit by it to the extent of the money we get for handing over these works. If you are satisfied, ladies and gentlemen, I will now move: "That this meeting authorises the sale to the Urban District Council of Wolverton, on such terms and conditions as may be approved by the directors, of all or any of the waterworks of the company at Wolverton and all the rights powers and

privileges attaching thereto, but subject to all liabilities attaching thereto." I will ask Mr. Taylor to second that resolution.

Mr. Taylor: I have pleasure in seconding the resolution.

The Chairman: It has been proposed and seconded. Will those in favour of the resolution, please signify in the usual manner? On the contrary? The resolution is carried *nem con.* That, ladies and gentlemen, concludes the business of the meeting.

## Parliamentary Notes

### Great Western Railway Bill

The Great Western Railway Bill was presented to the House of Commons on March 15 and formally read the first time. Its object is to empower the Great Western Railway Company to construct a railway and to acquire land in the county of Glamorgan.

## Questions in Parliament

### L.M.S.R. Campaign against Railway Nationalisation

Mr. H. Hynd (Hackney Central—Lab.) on March 12 asked the Minister of War Transport whether he was taking steps to ensure that the campaign of the London Midland & Scottish Railway Company against the Government's nationalisation policy would not be financed from profits that would otherwise accrue to the State under the Railway Control Agreement.

Mr. Alfred Barnes stated in a written answer: Expenditure incurred by the railway companies for the purpose in question would be charged to their own funds and would not fall upon the Control Account.

### Nationalisation of Steel and Railways

Sir Waldron Smithers (Orpington—C.) on March 18 asked the Prime Minister when he proposed to introduce a Bill to nationalise the iron and steel industries and the railways, respectively.

The Prime Minister (Mr. Attlee): A Bill to provide for the nationalisation and better co-ordination of transport, on the lines indicated in the Lord President's statement to the House on November 19, will be introduced in an early session of this Parliament. While I appreciate very much the enthusiasm of Sir Waldron Smithers, I must ask him to have a little

patience. The Government is not yet in a position to make a statement about its policy regarding the iron and steel industries.

Sir Waldron Smithers: May I ask the Prime Minister whether his request for patience and delay means that he is beginning to realise that the policy of nationalisation of these industries leads to disaster?

The Prime Minister: Sir Waldron Smithers has been pressing me so much recently on nationalisation that I felt I had to curb his impatience somewhat.

Mr. T. C. Skeffington-Lodge (Bedford—Lab.): Is the Prime Minister aware that the sooner legislation follows the endorsement of the Government's programme by the electors of this country the better the country will be pleased?

## Courtesy Aids Service

London Transport has inaugurated a campaign by poster and circular aimed at relieving the tension and irritations of rush-hour travel by impressing upon staff and public alike that courtesy aids service. Introducing the campaign at a press conference on Monday, Mr. J. H. Brebner, Chief Public Relations & Publicity Officer of the board, said that courtesy in all branches of life had sadly deteriorated during the war, and he hoped the campaign would kindle a torch in London of which the light would be seen elsewhere.

Posters are addressed to the staff of buses, trolleybuses, trams, and railways, and to the public using all these forms of transport. One of them, to be changed fortnightly, will reproduce one letter of praise and one of criticism, and will give the name of the member of the staff who has been commended.

Two posters are now being exhibited at all railway stations of the board. One of them sets out ways in which the public can help station staff by tendering the exact fare, not blocking platform entrances and exits, letting passengers off the car first, and other familiar but little-heeded canons of behaviour, the non-observance of which increases the difficulties of the staff. The second railway poster, showing a porter helping a small girl off an escalator, reflects in the features of the persons represented the friendly relations which it is the aim of the campaign to promote.

## L.N.E.R. Signalling School at Sheffield



A class in progress at the L.N.E.R. signalling school at Victoria Station, Sheffield. See editorial note, page 310



## Notes and News

**United Steel Companies Limited.**—Payment of an interim dividend on the ordinary shares of 2½ per cent. is announced by the United Steel Companies Limited. The dividend is the same as in the previous year.

**Assistant Chief Engineer Required.**—A company establishing a new division for the manufacture of main-line diesel-electric locomotives has a vacancy for an assistant chief engineer. For full particulars of this appointment see Official Notices on page 335.

**L.N.E.R. Debenture Interest.**—For the purpose of preparing the warrants for interest payable on April 15, 1946, on the company's 5 per cent. redeemable debenture stock, the balance will be struck as at the close of business on March 28. See Official Notices on page 335.

**Colonial Government Appointment.**—A senior storekeeper is required by the Nigerian Government Railway for two tours of 12 to 24 months with possible permanency. Candidates must have had several years' railway storekeeping experience in an executive position associated with material supply and distribution. For full particulars see Official Notices on page 335.

**Southern Railway Development and Progress.**—On March 14, Sir Eustace Missenden, O.B.E., General Manager of the Southern Railway, gave a talk illustrated by lantern slides and films to members of the Dorking Model Engineering Club on "Some Aspects of Southern Railway Development and Progress." He dealt with pre-war development and the part played by the Southern Railway during the war. He also mentioned several improvements which the Southern Railway was introducing.

**Green Line Coach Route Restored.**—London Transport has received approval from the Minister of War Transport and the Regional Traffic Commissioner for the operation of a Green Line coach route between Chertsey and Hitchin. This route, No. 716, began running on March 8, and provides a 60-minute service

daily between Chertsey and Hitchin via Addlestone, Weybridge, Walton, East Molesey, Hampton Court, Kingston, Richmond, Barnes, Hammersmith, Kensington, Hyde Park Corner, Marble Arch, Baker Street Station, Golders Green, Finchley Road, Barnet, Potters Bar, Hatfield, New Hatfield, Welwyn, Woolmer Green, Knebworth and Stevenage. The introduction of this route brings the total of Green Line coach routes in operation to eight. Services on routes Nos. 704 (Tunbridge Wells and Windsor), 709 (Caterham and Baker Street), 710 (Crawley and Baker Street), 721 (Brentwood and Aldgate), and 723 (Tilbury and Aldgate) began on March 6.

**Patents: "Licences of Right."**—Notice has been given that applications have been made for the cancellation of the Indorsements "Licences of Right" on the following patents:—

No. 452,314, dated March 18, 1935, in respect of preventing leakage of lubricant from shaft bearings (grantee: English Electric Co. Ltd.).

No. 452,875, dated March 15, 1935, in respect of lubricating arrangements for shaft bearings (grantee: English Electric Co. Ltd.).

Any person may give notice of opposition to any of the applications by lodging Patents Form No. 24 at the Patent Office, 25, Southampton Buildings, London, W.C.2, on or before March 27.

**Moss Gear Co. Ltd.**—At the annual general meeting of the Moss Gear Co. Ltd., on January 16, Mr. Walter Duckitt, the Chairman, said that the balance on trading account of £39,952, after providing for taxation and general charges, showed an increase of £3,267. This was largely due to the reduction in the charge for war damage insurance. The directors had decided to recommend restoration of the bonus which was cut in 1943, thus increasing the total dividend of 20 per cent. The company had more export orders on its books than ever before in its history, including some from several companies with which they had never before done business. It could not, however, make very much progress until it

was permitted greater supplies of raw materials and skilled personnel. The report and accounts were adopted.

**London Transport Underground Map.**—A new diagrammatic Underground map in brighter colours has been posted at all London Underground stations. This map shows the new extensions and improvements to the system on which work is now being resumed. The general appearance of this new edition is enhanced

## British and Irish Railway Stocks and Shares

Stocks	Highest 1945	Lowest 1945	Prices	
			Mar. 19, 1946	Rise/ Fall
G.W.R.				
Cons. Ord. ....	60½	47½	55	— ½
5% Con. Pref. ....	124½	104½	111	—
5% Red. Pref. (1950) ..	107½	101½	103	—
5% Rt. Charge .....	137½	120	126½	—
5% Cons. Guar. ....	135½	117	121½	—
4% Deb. ....	118	106	112	—
4½% Deb. ....	119½	108	112½	—
4½% Deb. ....	124½	111½	117	—
5% Deb. ....	138	124	127	—
2½% Deb. ....	83	74½	83½	—
L.M.S.R.				
Ord. ....	33	23½	27½	—
4% Pref. (1923) ....	65	50	54½	—
4% Pref. ....	80½	69½	76	—
5% Red. Pref. (1955) ..	106½	99½	101½	—
4% Guar. ....	106½	97	101½	—
4% Deb. ....	110½	102	106	—
5% Red. Deb. (1952) ..	110½	103½	106½	—
L.N.E.R.				
5% Pref. Ord. ....	8½	5½	6	— ½
Def. Ord. ....	42½	22½	3	— ½
4% First Pref. ....	62½	49½	53½	—
4% Second Pref. ....	33½	24½	28½	—
5% Red. Pref. (1955) ..	103	96	97	—
4% First Guar. ....	104½	95	98	—
4% Second Guar. ....	97	89½	90	—
3% Deb. ....	91½	82½	91	—
4% Deb. ....	109½	101	106	—
5% Red. Deb. (1947) ..	103½	100	101	—
4½% Sinking Fund Red. Deb. ....	106½	103	103½	—
SOUTHERN				
Pref. Ord. ....	79½	63	74	— ½
Def. Ord. ....	27	20½	22½	— ½
5% Pref. ....	124½	104	110½	—
5% Red. Pref. (1964) ..	117	107	108½	—
5% Guar. Pref. ....	135½	117	121½	—
5% Red. Guar. Pref. (1957) ....	117	106½	108½	—
4% Deb. ....	117	104½	111	— ½
4% Deb. ....	137	124	126½	—
4% Red. Deb. (1962- 67) ....	112	104½	106½	—
4% Red. Deb. (1970- 80) ....	113½	104	107½	—
FORTH BRIDGE				
4% Deb. ....	106	103	103	—
4% Guar. ....	106	101	102	—
L.P.T.B.				
4½ "A" ....	125	117	123½	—
5% "A" ....	135	127	133½	—
3% Guar. (1967-72) ..	100	97½	102	—
5% "B" ....	125½	115	117½	—
"C" ....	70	58	57	—
MERSEY				
Ord. ....	37	31½	31	—
3% Perp. Pref. ....	72½	68½	71	—
4% Perp. Deb. ....	104½	104	103	—
3% Perp. Deb. ....	84	78½	81	—
IRELAND* BELFAST & C.D.				
Ord. ....	8½	6	7½	—
G. NORTHERN				
Ord. ....	34	24½	38	— ½
Pref. ....	52½	42½	56	—
Guar. ....	80	68	85½	— ½
Deb. ....	97½	87½	101	—
IRISH TRANSPORT				
Common ....	—	—	92½	—
3% Deb. ....	—	—	101½	— ½

\* Latest available quotation

### L.M.S.R. Painting Presented to Holborn Boys' Club



Mr. R. Bagwell, District Passenger Manager, Euston, L.M.S.R., presenting a painting of Bedford School by Norman Wilkinson, R.A. (reproduced in a series of L.M.S.R. "famous public schools" posters) to the Chairman of the Bedford School Holborn Boys' Club

## OFFICIAL NOTICES

## Crown Agents for the Colonies

## COLONIAL GOVERNMENT APPOINTMENTS.

APPLICATIONS from qualified candidates are invited for the following post:—  
**SENIOR STOREKEEPER** required by the Nigerian Government Railway for two tours each of 12 to 24 months with possible permanency. Salary: £750 x 30 to £840 a year. On salary of £750, separation allowance for married men is between £60 and £180 a year, according to dependants. Free passages and quarters. Candidates, not over 40, must have had several years' railway storekeeping experience in an executive position associated with material supply and distribution and must have a knowledge of Mechanical and Civil Engineering Stores.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M.N/13786.

**ASSISTANT CHIEF ENGINEER**—Diesel-Electric Locomotives. Company establishing new division for manufacture of main-line diesel-electric locomotives invites applications for appointment as Assistant Chief Engineer. Candidates, preferably graduates, should have high technical qualifications as mechanical and/or electrical engineers, and subsequent experience in design and development of locomotives, diesel engines or electric transmission equipment, but broad basic knowledge and development experience are more important than detailed experience in a narrow field. Salary: £1,000-£1,500, according to qualifications. London location. Superannuation. Replies in strict confidence to Box No. 1, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

**TECHNICAL ENGINEER**, with experience in the preparation of electrical traction control schemes, design of apparatus, and the handling of contracts. Good practical experience and technical education essential, but anyone having industrial D.C. experience would be considered. Salary, £500 to £600 per year.—Box No. 63, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

## London and North Eastern Railway Company

NOTICE is hereby given that, for the purpose of preparing the warrants for interest payable on the 15th April, 1946, on the Company's 5 per cent. Redeemable Debenture Stock, the balance will be struck as at the close of business on 28th March, and such interest will be payable only to those Stockholders whose names are registered on that date.

Transfers of the 5 per cent. Redeemable Debenture Stock should, therefore, be lodged with the Registrar of the Company at Hamilton Buildings, Liverpool Street Station, London, E.C.2, before 5.0 p.m. on 28th March.

By Order,

W. H. JOHNSON,

Secretary of the Company.

Marylebone Station,  
 London, N.W.1.

18th March, 1946.

by using lighter colours and broader lines for the railway lines, by printing all station names in black instead of in the colours of individual lines, and by surrounding the whole with a bright and attractively designed border. The map has been designed by H. C. Beck, "Shep," and Kruger Gray, and is printed by Waterlow & Sons Ltd.

**Gas Cylinder Explosion at Gorton.**—The explosion of a propane gas cylinder at the L.N.E.R. Gorton Works, Manchester, on March 15, caused the death of three men and serious injuries to nine others. The cylinder was being used for welding when the explosion occurred.

**Baerle Rhine Railway Bridge Restored.**—The first permanent bridge across the Rhine—at Baerle, near Duisberg—was reopened to traffic on February 26. The whole work of reconstruction has been done under the direction of the British Army of the Rhine. At the headquarters of the European Central Inland Transport Organisation it was announced that, in view of the great improvement that will follow in through railway traffic in Europe, the following telegram had been dispatched to the headquarters of the British Army of the Rhine by Mr. E. R. Hondelink, Director-General of E.C.I.T.O.: "I should like to send congratulations on behalf of the Executive Board E.C.I.T.O. and myself on the completion of the Baerle Bridge to you and to all members of B.A.O.R. who have been responsible for this excellent work. We consider the completion of the Baerle Bridge to be a work of major importance to international traffic."

**Midland Railway Co. of Western Australia Limited.**—Gross traffic receipts for the year ended June 30, 1945, were £217,185, compared with £330,830 in the previous year, and working expenses were £130,506, as against £154,226. The net receipts were £86,679, a decrease of £89,925, attributable to the cessation of defence activities in the company's territory and the carriage of less remunerative traffic. There was an adverse balance of £5,672 for the year, but bringing in £47,187 from the previous year leaves £41,515 to be carried forward to 1945-46. In accordance with the provisions of the trust deed governing the application of receipts from land sales, £3,100 of the first mortgage debenture stock was redeemed and cancelled during the year, leaving £79,795 outstanding. An interim payment of 2 per cent. was made on the second mortgage cumulative income debenture stock, but it is regretted that no further payment was possible.

**Ministry of War Transport (Dissolution).**

—Notice has been given in *The London Gazette* by the Minister of War Transport that a draft of an Order in Council in pursuance of sub-section (2) of section one of the Ministers of the Crown (Transfer of Functions) Act, 1946, and entitled the Ministry of War Transport (Dissolution) Order, 1946, has been laid before Parliament. If the draft is approved by both Houses of Parliament and an Order in Council is made accordingly, the effect will be to dissolve, as from April 1, 1946, the Ministry of War Transport and transfer all the functions of the Minister to the Minister of Transport. Copies of the draft Order may be obtained from H.M. Stationery Office at York House, Kingsway, London, W.C.2; Edinburgh; Belfast; Manchester; or Cardiff; or through any bookseller.

**Improved Orient Express Services.**

The "Simplon-Orient Express," hitherto operating three times weekly between Paris, Rome, and Venice, has been restored as a daily service as from March 18 eastbound, and March 20 westbound. The "Arlberg-Orient Express" has also resumed daily operation between Paris and Basle as from March 18 (eastbound) and March 19 (westbound), but continues to work three times weekly between Basle, Vienna, and Prague as before. An additional sleeping car is now run nightly on this train between Paris and Zurich, being attached to an ordinary fast train between Basle and Zurich on the nights the "Arlberg-Orient Express" does not run beyond Basle.

**Société des Ingénieurs Civils de France.**

—The eighty-sixth ordinary general meeting of the British Section will be held in the lecture hall of the Institution of Civil Engineers, Great George Street, London, S.W.1, on March 29, at 5.30 p.m. Mr. Conrad Gribble, O.B.E., M.Inst.C.E. (President, British Section, Société des Ingénieurs Civils de France), will deliver his presidential address, entitled "Railway Engineering in Great Britain in the First Half of the Twentieth Century." Mr. W. J. E. Binnie, M.Inst.C.E. (Past-President, British Section, Société des Ingénieurs Civils de France) will be in the chair.

**Return Half of Ticket Used First.**—A summons against Mrs. Euphemia Conroy, of Hastings, for travelling on the Southern Railway without paying her fare, was dismissed at Hastings on March 15, and Mrs. Conroy was awarded three guineas costs against the railway company. It was stated that Mrs. Conroy had used the return half

of a monthly return ticket from Hastings to Orpington before the outward half, having travelled to Orpington by car on December 6. On December 11 she travelled to Orpington by rail, using the outward half of the ticket. The ticket collector at Orpington maintained in his evidence that a ticket for the outward journey was valid only when the return half was attached to it. Detective Marsh, of the Southern Railway Police, who also gave evidence, said he knew of no by-law or regulation posted up in the company's stations prohibiting the use of a ticket in such a way.

## Contracts and Tenders

The Argentine State Railways have placed an order with Fielding & Platt Limited, of Gloucester, for a complete plant to manufacture railway tyres and axles, which will be erected in the railway shops at Córdoba. Mr. James Fielding, Managing Director of Fielding & Platt Limited, states that the order was secured against keen international competition after months of negotiation and design work, and was helped by representation in Argentina by an engineer acting for the group of companies of which Fielding & Platt Limited is a member. The plant involved includes several high-power hydraulic presses, accumulators, and pumps, together with a considerable amount of ancillary machinery. The order, which will help British export trade to the extent of nearly £250,000, is one of a number of export orders on this company's books; the company has received (and is in course of delivering) over £750,000 worth of export orders since D-Day.

We are informed by the Westinghouse Brake & Signal Co. Ltd. that the 925 bus chassis (500 4-wheel 48-seater single-deck, and 425 4-wheel 38-seater single-deck) (see our March 8 issue), which will be supplied for export to Holland by Crossley Motors Limited, will be fitted with Westinghouse air brakes. The equipment will include the E.5 engine-driven compressor, 2-compartment reservoir with charging and unloader valves, foot control valve, front and rear brake cylinders, suction strainer, anti-freezer and the necessary flexible connections. In addition, 140 sets of Westinghouse air brakes are on order, for trolleybus chassis which are being built in Holland. Further sets for export are being made for Sunbeam trolleybuses (25 for Johannesburg, 12 for Pretoria and 52 for Durban).

## Railway Stock Market

Stock markets remained hesitant in view of international uncertainties, and although an earlier sharp decline was followed by a partial rally, prices in most sections were later inclined to lose ground. There was again no marked selling pressure, but buyers were adopting a waiting attitude pending the next international developments. Moreover, the approach of the Budget is also making for caution, particularly as the view has gained ground that if E.P.T. is abolished it may be replaced by a revised scheme designed to limit dividend payments. After easing on labour troubles, motor shares became firmer, and, in the radio section, Cosser were lower. Various industrials have been helped by the improved dividends and the victory bonus which continue to feature in financial results; but, on the other hand, it is not overlooked that in other directions results of some companies reflect lower profits owing to reconversion difficulties, labour and material shortages, and rising costs. It is recognised that, particularly where increases are described as victory bonuses, it cannot be assumed that the higher payments will necessarily be maintained for the current year. In numerous instances it may be prudent to regard the increases as compensation to shareholders for the conservative dividend payments during the war period, when a good proportion of profits had to be applied to reserves to provide against special contingencies. Iron and steels recorded minor movements, and in most cases shares of locomotive building and engineering companies have maintained recent small gains.

Home rails remained a steady feature of markets, although demand was moderate and there was little evidence that the large yields were attracting buyers. This, however, was hardly to be expected with markets in their present uncertain mood. In any case, the belief appears to be gaining ground that junior stocks are moderately valued, assuming nationalisation compensation for stockholders on a fair basis.

Moreover, if the decision in regard to transport nationalisation has not been made by the beginning of next year, in some cases there may be further withdrawals from contingencies reserves, in order to maintain dividends, particularly if, as is expected, there are good prospects of an equitable settlement being arrived at in respect of the railways' claim in respect of abnormal wear and tear during the war period.

Following the Prime Minister's statement that a Bill to nationalise transport would be introduced "in an early session of this Parliament," home railway junior stocks became easier, but movements were only fractional, reflecting the hope that as far as compensation under nationalisation proposals is concerned, stockholders would be dealt with fairly. Indeed, there is, of course, every confidence that the railways would do everything possible to see that this were the case.

Compared with a week ago, Great Western was unchanged at 55, as was the 5 per cent. preference stock at 110½, and the 4 per cent. debentures at 112. L.M.S.R., after an earlier small decline, strengthened to 27½ and was also unchanged on balance.

while the senior preference remained at 76 and the 1923 preference at 54½, L.N.E.R. second preference eased, later recovered to 28½, but subsequently was inclined to lose ground in common with other home rails. L.N.E.R. first preference at 53½ was the same as it was a week ago.

Among Southern stocks, the deferred, at 22½, was ½ down, although the preferred remained at 74. London Transport "C" continued dull at 57 the statements in the report making it clear that the position in the event of nationalisation of transport is uncertain. If London Transport were included in a wider scheme of nationalisation, it is assumed in many quarters that holders of the "C" stock would have to be compensated on the basis of the standard dividend rate of 5½ per cent.

There have been minor fluctuations in Argentine rails, earlier gains not being held in most cases. Buenos Ayres Great Southern was 9½, compared with 10½ a week ago; the 5 per cent. preference receded from 23½ to 23, but the 4 per cent. debentures at 61½ were higher and demand was in evidence for debenture stocks of other leading companies. Later, however, Buenos Ayres Western 4 per cent. debentures declined from 58½ to 57½, and Central Argentine 4 per cent. from 57½ to 56½. San Paulo ordinary was 52, but Nitrate Rails shares declined further to 76s. 3d. although Antofagasta ordinary and preference were better at 9½ and 41 respectively. Canadian Pacific continued to reflect the trend in dollar stocks, falling back to 27½.

### Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffic to date			Shares or Stock	Prices					
			Total this year	Inc. or dec. compared with 1944/5		Totals		Increase or decrease		Highest 1945	Lowest 1945	Mar. 19 1946			
						1945/6	1944/5								
South & Central America	Antofagasta ...	834	10.3.46	£ 26,180	—	£ 5,320	10	£ 325,730	312,200	+	£ 13,530	Ord. Stk.	12	8½	10
	Arg. N.E. ...	753	2.3.46	ps. 278,700	—	ps. 22,500	35	ps. 10,393,200	ps. 10,393,100	—	ps. 100	"	10	51	5
	Bolivar ...	174	Feb., 1946	4,380	—	615	8	9,206	10,638	—	1,432	6 p.c. Deb.	8½	51	4½
	Brazil ...	—	—	—	—	—	—	—	—	—	—	Bonds	25	17	25
	B.A. Pacific ...	2,771	9.3.46	ps. 2,632,000	—	ps. 8,000	36	ps. 81,008,000	ps. 76,469,000	+	ps. 4,539,000	Ord. Stk.	7	5	6
	B.A.G.S. ...	5,080	9.3.46	ps. 3,790,000	—	ps. 129,000	36	ps. 124,883 0.0.	ps. 119,048,000	+	ps. 5,835,000	Ord. Stk.	13½	10½	9½
	B.A. Western ...	1,924	9.3.46	ps. 1,213,000	—	ps. 16,000	36	ps. 43,338,000	ps. 40,771,000	+	ps. 2,567,000	"	12½	9½	9½
	Cent. Argentine ...	3,700	9.3.46	ps. 3,366,000	—	ps. 228,700	36	ps. 112,794,450	ps. 104,298,050	+	ps. 8,496,400	"	9½	7	7
	Do. ...	—	—	—	—	—	—	—	—	—	—	Dfd.	5	2½	3½
	Cent. Uruguay ...	970	9.3.46	32,284	—	3,370	36	1,385,325	1,224,577	+	160,748	Ord. Stk.	7½	4	7
	Costa Rica ...	262	Jan., 1946	25,528	—	28	30	195,192	146,887	+	48,305	Stk.	16½	13	12½
	Dorada ...	70	Feb., 1946	28,065	—	1,388	8	59,814	58,605	+	1,209	1 Mt. Deb.	103	102	92½
	Entre Rios ...	808	9.3.46	ps. 457,700	—	ps. 72,900	36	ps. 15,293,000	ps. 14,261,200	+	ps. 1,031,800	Ord. Stk.	7½	4½	6
	G.W. of Brazil ...	1,030	9.3.46	29,900	—	3,000	10	320,000	278,800	+	41,200	Ord. Stk.	30/-	23/6	20/-
	Inter. Ctd. Amer. ...	794	Jan., 1946	\$1,024,547	—	\$293,377	4	\$1,024,547	\$731,170	+	\$293,377	"	—	—	—
	La Guaira ...	22½	Feb., 1946	5,607	—	584	8	12,429	10,517	+	1,912	5 p.c. Deb.	78	70	62½
	Leopoldina ...	1,918	9.3.46	49,148	—	6,702	10	557,031	445,044	+	111,987	Ord. Stk.	4½	3½	3½
	Mexican ...	483	7.3.46	ps. 864,900	—	ps. 334,600	9	ps. 7,612,600	ps. 5,753,400	+	ps. 1,859,200	Ord. Stk.	—	—	—
	Midland Uruguay ...	319	Jan., 1946	18,431	—	976	29	131,306	120,238	+	14,068	"	—	—	—
	Nitrate ...	113	Jan., 1946	10,542	—	4,966	10	47,699	27,778	+	19,921	Ord. Sh.	75/6	67/6	76/3
N.W. of Uruguay ...	274	15.3.46	£56,196	—	£7,923	37	£2,237,610	£2,195,142	+	£42,468	Pr. Li. Stk.	79½	77	75½	
Paraguay Cent. ...	1,059	Feb., 1946	138,395	—	21,244	34	1,134,456	1,032,102	+	102,354	Ord. Stk.	108	77	10	
Peru Corp. ...	100	Jan., 1946	c 234,000	—	c 41,000	28	c 847,000	c 751,000	+	c 96,000	Ord. Stk.	60½	50½	52	
San Paulo ...	153½	—	—	—	—	—	—	—	—	—	Ord. Stk.	—	—	—	
Taital ...	156	Feb., 1946	5,315	—	3,230	34	24,490	20,045	+	4,445	Ord. Sh.	17/-	10/6	16½	
United of Havana ...	1,301	9.3.46	79,491	—	7,401	36	1,808,881	1,860,784	—	51,903	Ord. Stk.	3	1	2	
Uruguay Northern ...	73	Jan., 1946	1,647	—	9	29	12,542	10,544	+	1,998	"	—	—	—	
Canada	Canadian National ...	23,569	Jan., 1946	6,180,200	—	333,400	4	6,180,200	6,513,600	—	333,400	—	—	—	—
	Canadian Pacific ...	17,037	14.3.46	1,145,000	—	1,400	10	11,466,400	11,708,600	—	242,200	Ord. Stk.	24	14½	24½
Various	Barsi Light† ...	202	Feb., 1946	30,465	—	10,365	45	278,032	243,082	+	34,950	Ord. Stk.	131	123	116½
	Beira ...	204	Dec., 1945	68,507	—	2,346	12	205,253	236,186	—	20,933	"	—	—	—
	Egyptian Delta ...	607	22.2.46	18,343	—	2,696	39	514,206	570,041	—	55,835	Prf. Sh.	10	8½	6
	Manila ...	—	—	—	—	—	—	—	—	—	—	B. Deb.	71	55	71½
	Mid. of W. Australia ...	277	Jan., 1946	17,786	—	1,859	28	118,260	139,946	—	21,686	Inc. Deb.	97½	85	85
	Nigeria ...	1,900	24.11.45	92,839	—	6,266	34	1,944,202	2,199,250	—	255,048	"	—	—	—
	Rhodesia ...	2,445	Dec., 1945	501,079	—	1,998	12	1,518,568	1,562,110	—	43,542	"	—	—	—
	South African ...	13,301	9.2.46	1,084,953	—	57,790	48	45,710,014	41,736,130	+	3,973,884	"	—	—	—
	Victoria ...	4,774	Nov., 1945	1,252,024	—	55,618	—	—	—	—	—	"	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee